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THE ADMINISTRATOR OF NATIONAL BANK

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- Incidental Powers of National Banks
- Substandard Loans
- U.S. Balance-of-Payments Program
- The "Band" Proposal
- Open Market Rates and Regulation Q
- Banking Structure and Nonbank Intermediaries
- Selected Statistical Data
- Book Reviews

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ON THE COVER — United States notes, quickly nicknamed *greenbacks* because of the vivid color on their reverse sides, were strictly speaking, the first paper money issued by the Federal government. Congress authorized these legal tenders as a war finance measure in 1862, and in 1878 established a minimum greenback circulation of approximately $347 million, which remains outstanding today. One of a series of early designs, the U.S. note on the cover, depicts an American buffalo between famed explorers Lewis and Clark.

►ROSS M. ROBERTSON

The Comptroller and Bank Supervision: A Historical Appraisal

It can be argued that no business in America, certainly not if we exclude those customarily defined as public utilities, is subject to the governmental restraints imposed on commercial banking. Entry is highly restricted, new charters being granted by the Comptroller of the Currency and the several state authorities only after presentation of convincing evidence that organizers will provide a needed service and are competent to manage a viable institution. Once organized, a bank can bring substantial new resources into the business only after approval of a capital increase. New branches may be established, even where the statutes are permissive, only after supervisory approval, and mergers are subject to the scrutiny of the appropriate banking authorities and, in some cases, the Antitrust Division of the Department of Justice. The terms on which deposits are received and funds are invested are circumscribed by detailed regulations. More than any other firm owned by private stockholders, a bank is compelled to make disclosure of its affairs, both to the public at large and, in exquisite detail, to public officials. Should the condition of the firm fail to meet traditional standards of excellence, a management may be called to account for its shortcomings, and if explanations do not satisfy the authorities, a management may be removed or the enterprise itself required to leave the industry. Throughout its corporate existence a com-

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mercial bank operates subject to an incredibly complex set of regulations issued pursuant to statutory authority.

The three Federal agencies and 50 state authorities charged with some or all of these considerable responsibilities follow theories and procedures that are essentially the same. Moreover, the statutes that lay out the guidelines for regulatory action are basically old ones, legislated for the most part a generation or more ago. Today's public policymakers are not likely to bind themselves firmly and irrevocably to laws laid down by their forebears, with the consequence that executive reinterpretations of those laws are made from time to time in the form of regulations. As in all other government regulation of business, the constraining influence of dead bureaucrats must continually be diluted, or the allocation of resources to and within the industry becomes distorted. Yet longer than most other businesses, banking remained tied to the world of Queen Victoria, in no small part because bank supervisors, generation after generation, passed on to their successors the verities of the 19th century. In a world in which the consumer came to rival the business firm as a customer of banks, in which great swings in output and employment were no longer tolerated, and in which the losses of depositors were socialized, the concept of bank supervision had to change.

From the point of view of society, the rationale of bank supervision (as distinguished from monetary regulation) is presently what it has always been. Even today the social consequences of the failure of a bank are uniquely serious, and as long as the United States remains committed to a banking system composed of many units, continued close supervision will be necessary. This is not to say that the objectives of regulation cannot become more sophisticated, better adapted to the requirements of the 20th century. For much of the pressure for restrictive banking laws and regulations has come from banks themselves and from their trade associations. Although few executives are frank to say so, businesses in general and financial institutions in particular want as little competition as possible, and the "dual" banking system persists in large part because barriers to entry and to the expansion of multi-office banking are more easily erected at state levels. Nor should we forget that government regulation of banking, like government regulation of business in general, is often the consequence of bureaucratic initiative. It is often easier to follow old procedures than to create new ones, so that inertia becomes an impediment to progress. More serious is the tendency of those who regulate to distrust markets and the price mechanism as allocators of resources.

I.

It is a noteworthy fact that in an economic world dominated by the ideal of *laisser faire*, Americans chose first to regulate banking. In 1791, only two years after our beginnings under the Constitution, the Federal government established the first Bank of the United States and so intervened to secure an allocation of financial resources different from what private markets would have ordered. This intervention so annoyed the state-chartered banks that they secured the demise of the first Bank on the expiration of its 20-year charter. History in a sense repeated itself when the second Bank of the United States, established in 1816 for another 20-year period, failed of recharter, again because of the hostility of private banking interests. For 30 years after Jackson's veto of the bill to continue the second Bank, Americans persistently refused to permit Federal intervention in financial markets. Indeed, with the establishment of the Independent Treasury in 1846, the Federal government was literally on a hard-cash basis. Congress had

not only done away with the central bank but had also insisted that the government have nothing to do with state banks, for all government funds were to be kept in the vaults of the Treasury at Washington or in subtreasuries in various cities. If there was to be regulation of banks and the banking system, it would have to be done by the states.

For almost half a century of our national history, banks were chartered by special acts of state legislatures just as other corporations were. But the advocates of general incorporation laws gradually won out over those who insisted that their elected representatives should pass on each charter application. Although there was a substantial opinion among the more radical Jackson supporters that banks should be done away with entirely, no-bank legislation made headway in only a few states. When it became apparent that the second Bank of the United States would not be rechartered, the opportunities for profit led to demands for easier entry into so lucrative a business. Thus, expediency as well as belief in the democratic ideal of opportunity for everyone led to acceptance of the idea of free banking.

To the people of the time, the adjective "free" meant that any individual or group of individuals, upon compliance with certain procedural steps described in a statute, could start a bank. Michigan's Free Bank Act of 1837 provided that ". . . any person or persons resident in the State . . . desirous of establishing a bank . . ." could go into the business. A free-bank law with more historic significance was passed the next year by the Assembly of the State of New York. Although the New York statute freed up entry into the banking business, it at the same time imposed certain restrictions on the incorporators, the most notable being the requirement that the state Comptroller of the Currency could issue bank notes to bank organizers only after the pledge of securities to guarantee them. By 1860, the Free Bank Law of New York was copied with varying success by about half the states, and the idea of readily available charters and bond-secured note issues was becoming accepted throughout the country.

Bank supervision in the United States began as some states required rudimentary condition reports from certain institutions on the grounds that the state was a stockholder entitled to a statement of condition. As late as 1829, banks in some jurisdictions refused to provide any information about their condition, contending that the management of the bank was a private affair and no one's business but that of the stockholders. Bank examination also appears to have originated in those states where a stockholder relationship existed between the state and the banks. Before the 1830s, examinations were not made on a regular basis and were ordinarily prompted by a questionable report of condition or rumored insolvency. Under such circumstances, a governor or legislator might appoint a prominent citizen or committee of citizens to make inquiry and submit a report. In general, when examination was permitted before 1830, the examiner was allowed only to verify a report of condition and could not scrutinize the individual accounts and detailed records. But as Gerald T. Dunne has pointed out, the right of examination was based on two legal traditions nearly a thousand years old.[1] One, referred to in Blackstone's *Commentaries*, was the English royal prerogative of visitorial powers for the purpose of inquiring into the affairs of certain corporations. The other was the concept of a business "affected with the public interest" that may be subject to more than usual governmental regulation.

Bank supervision in something like a

[1] Gerald T. Dunne, "The Legal Basis of Bank Supervision," *Bank Supervision*, Federal Reserve Bank of St. Louis, 1963, pp. 6-7.

modern sense came with the innovation of bank-obligation insurance systems. The first of these, the famed Safety-Fund System established by the New York legislature in 1829, was followed by five other schemes in Vermont, Indiana, Michigan, Ohio, and Iowa. With one exception, these five states followed the New York plan of requiring each bank in the insurance system to contribute annually to an insurance (safety) fund up to a certain maximum percentage of its capital. Indiana had no fund, the banks in that state simply signing a mutual-guaranty agreement protecting noteholders and depositors against losses resulting from any bank's failure.

Conceptually, insurance schemes and methodical supervision might have been introduced separately. But proponents of bank-obligation insurance systems felt that their acceptability would hang on assuring participating banks of some control over risk so as to keep loss by failure to a tolerable minimum. Well-managed banks did not wish to be penalized by either the carelessness or malfeasance of bad bank managers. But though supervision might be a necessary part of bank-obligation insurance plans, the idea of scrutiny of the affairs of commercial banks attracted supporters in the absence of insurance plans. As early as 1837, the Missouri legislature provided for systematic examination of banks and trust companies, and Louisiana started a rigorous examination procedure as early as 1842. The decade of the 1850s witnessed general acceptance of the notion that creditors of banks need not rely exclusively on a market system for the protection of their rights.

II.

The United States had experimented twice with a central bank, and Congress for a time considered establishing a third such institution. Yet after mid-19th century a serious proposal for another Bank of the United States would have raised an intolerable political storm. What other kind of scheme, in the Federalist-Whig tradition, might be devised?

For decades before 1860, various writers and public figures had proposed a system of nationally-chartered banks. The basic argument for such a system was rooted in the desire for a uniform American currency to replace the heterogeneous issue of the state banks. Contrary to the views of the older historians, the American banking system as it emerged in the 1840s and 1850s served in admirable fashion, but there is no blinking the fact that the issue of state-chartered banks, numbering more than 1,500 in 1860, had grave disadvantages. Not the least of the problems of the circulation were the discounts at which notes passed when carried some distance from the place of issue, and the facility with which they were counterfeited.

As it happened, Lincoln's choice for Secretary of the Treasury, Salmon P. Chase, had long held a deep conviction that the United States should, over all opposition, secure a uniform currency. It was this conviction, rather than alleged assistance to the Treasury's wartime financing, that persuaded Chase to press for passage of the Currency Act of 1863, which obtained Senate approval by a two-vote margin. As substantially amended in the National Bank Act of 1864, this legislation put the Federal government in the permanent business of chartering and supervising commercial banks. There is no question that Congress intended to create a single system of nationally-chartered banks. Indeed, in order to force conversion from state to national charters, Congress in 1865 passed a statute that presumably would do away with state banks by levying a 10 percent tax on their circulation and so making note issue unprofitable. But nearly 300 banks held on to their state charters, as their managements discovered that note issue was

even then an anachronism. By the middle 1870s, it was clear that state banks could thrive on a basis of deposit banking only.

For more than a decade after the establishment of the national banking system, a so-called distribution formula restricted entry.[2] Moreover, despite the requirement that he promote national charters against the dogged resistance of state banks, Comptroller McCulloch did not consider himself bound to automatic approval of charter applications and did not approve them indiscriminately. He applied an economic test, a character test, and a competition test to all applications, as did his successors Freeman Clarke and Hiland R. Hulburd. But beginning in 1875, Comptroller John J. Knox began to charter banks on the principle that the Comptroller had no discretionary power in the matter, that upon meeting strict legal and procedural requirements a group of organizers were entitled to a charter.

Thus, by the 1880s the spirit of free banking pervaded the Office of the Comptroller. It pervaded the offices of the state banking authorities as well. Until about 1880, the note-issue privilege of national banks gave Federal charters a competitive edge. But after 1880, the competitive advantage swung steadily in favor of state charters, with the consequence that the dual banking system achieved a viability no one could have predicted two decades previously. For bank organizers with no aspirations to national or large-scale regional operations, state charters had positive advantages. Lower capitals were required in most state jurisdictions under nearly all circumstances. Reserves required against deposits were lower under most state banking laws, and national banks operated under much stricter regulation of both lending and investment policy. Finally, and by no means least important, standards of bank supervision and examination were higher in the national jurisdiction. In a word, between 1864 and 1914 (and, for that matter, to the present day), a dual banking system developed because one set of rules was more liberal than the other.

National banks enjoyed a certain prestige and could better attract correspondent balances and the accounts of large firms, but these advantages were offset by the greater flexibility of state banks and trust companies, which often enabled them to accept business that national banks could not touch. By 1907, state banks outnumbered national banks nearly two to one, though resources of state banks were then about the same as those of national banks. Despite Comptroller Lawrence O. Murray's attempts to end the charter race during his tenure (1908-1913), a scarcely perceptible slowing in the rate of increase of national banks was the only result. By 1920, the number of commercial banks stood at the incredible level of 30,000, approximately 22,000 of them state banks and 8,000 of them national banks.

The emerging dual banking system implied state as well as Federal supervision. As late as 1863, a large number of states had made no provision for bank supervision. Since it was assumed that state banks would go out of existence with the national legislation, for a time little effort was made to extend the scope of state-bank supervision. But beginning with the resurgence of state-bank chartering in the 1880s, the states once again began to create supervisory authorities. Slowly at first, then gradually picking up speed, states provided for regular examination of

[2] Under the Currency Act of 1863, the total circulation of nationally-chartered banks was limited to $300 million, which was to be apportioned among the states and territories on the basis of a formula. Omitted from the 1864 Act, the apportionment rule was reinstated in 1865. The question of distribution of the national-bank circulation remained a thorny one until the removal of all restrictions on the circulation in the Specie Resumption Act of 1875.

banks and permanent authorities charged with the supervisory function. By 1914, all the states required regular examinations, though not until 1931 did all of them create official supervisory agencies. The quality of state-bank supervision in these early years varied tremendously; in a substantial majority of states, officials and their staffs were political appointees with little or no experience in banking or finance, and the consensus of contemporaries was that state standards of supervision were distinctly inferior to those of the national system.

The Comptroller of the Currency was not without his own supervisory problems. Although the National Bank Act explicitly provided for supervision, including periodic scrutiny of bank records, successive Comptrollers had gradually to forge a system of procedures. During the first half-century of experience a philosophy of supervision slowly emerged. By 1914, the Office of the Comptroller had taken the position that examinations were more than audits, that constructive supervision implied estimation of the quality of a bank's management and continuing counseling of manifestly weak managements. Critical evaluation from Washington became an integral part of the process, and Comptroller Henry W. Cannon established the tradition that supervision should correct managerial difficulties when they were incipient.

If examination of national banks was not entirely satisfactory after half a century of experience, the difficulty could be attributed in part to the method of paying the examining staff. The Currency Act of 1863 had provided that examiners be paid on a fee basis and that the charges be assessed against the banks. In 1875, a scale of examination fees was established whereby banks were assessed on a scale that varied with the amount of their capitals. Examiners received no other compensation, and from their gross receipts, which ranged from $20 for the smallest banks to $75 for the largest, they had to pay the wages of assistants and all expenses incident to their travel. As a rule of thumb, it was assumed that an examiner's net income would average about two-thirds of his gross, but his true compensation varied considerably. Obviously, it was to any particular examiner's advantage to hurry his work and get on to a new job, the fee being the same whether he took one day or three. Moreover, to minimize travel expense examiners ordinarily followed predictable routes, going the shortest possible distances from one bank to another and so signaling in advance an approaching examination.

Beginning with Comptroller Cannon in 1884, successive Comptrollers pleaded for both higher pay and a different method of paying examiners. But removal of inequities of compensation would not solve all the problems of the Office. The geographic assignment of bank examiners was such that they were rarely in touch with each other, so that there was a lack of uniformity in procedures and principles. The fact that examiners hired their own assistants, who were in no way responsible to the Comptroller, made for wide variations in quality of staff. Moreover, as late as 1913 banks could engage in the most outrageous practices aimed at avoiding the examiner's wrath. It was not uncommon to transfer bad assets to other banks or corporations during the period of examination, borrowing more acceptable securities in the meantime. The affiliates of commercial banks might be in a condition so bad as to jeopardize a bank's solvency, yet affiliates were beyond the authority of national supervision. As the debate over reform of the American banking system waxed warm, one of the points at issue was the question of improving bank supervision.

III.

The Federal Reserve Act was passed in 1913, after American policymakers were convinced of the absolute necessity of a

publicly-controlled, central institution, one that could create reserves and so inject liquidity at appropriate times. The framers of the Federal Reserve Act plainly did not intend that the new central bank should execute a monetary policy aimed at stabilizing the economy; in fact, Federal Reserve officials did not seriously undertake such a responsibility until after World War II. Nevertheless, it was felt that the new institution would prevent panics and so lessen the acute distress of the ensuing depressions. It is not without interest that one of the objectives named in the preamble to the Federal Reserve Act was the "more effective supervision of banking in the United States." The Act made specific provision for supervision of member banks. Since national banks were required by law to enter the System, whereas state-chartered banks could elect membership, a period of testing different kinds of arrangements was bound to follow.

The law establishing the Federal Reserve provided that the Comptroller of the Currency was to examine each member bank at least twice a year. But it also authorized the Federal Reserve Board to examine member banks at its discretion, and another provision gave further authority to the 12 Federal Reserve banks to make special examinations of member banks within their districts. Thus, the Comptroller of the Currency, the Board in Washington, and the Federal Reserve banks of the several districts could each look into the affairs of member banks; in addition, state agencies maintained their supervisory authority over banks within their jurisdictions. Obviously, arrangements had to be made that would reduce multiplicity of bank examinations and a burdensome, repetitious series of call reports. It was particularly important that supervision be made reasonably palatable to state banks so that they would not be deterred from joining the System.

Although the Federal Reserve Act made no other major revisions in the national banking laws, it did make substantial changes in supervisory procedures. The statute changed the method of paying examiners from a fee to a salary system, with salaries to be fixed by the Federal Reserve Board upon the recommendation of the Comptroller of the Currency. Power of appointment of examiners was vested in the Comptroller subject to the approval of the Secretary of the Treasury. Costs of examination were to be assessed against the banks in proportion to the resources of the banks examined.

Almost from the first, relations between the Office of the Comptroller and the Federal Reserve Board were strained.[3] Conflict first arose over the contents of examination reports and the Board's power to demand certain information, and tension between Comptroller John Skelton Williams and the Board at last erupted into open hostility. After three years of controversy, the Federal Reserve Act was amended to exempt state member banks from examination by the Comptroller of the Currency. The Federal Reserve on its part refrained from exercising its right to examine national banks. Beginning in the early 1920s, relations between the two agencies gradually improved, though not before several bills to abolish the Office of the Comptroller had been introduced in Congress.

In the meantime, a substantive problem had arisen that was to be the cause of much more fundamental, deep-seated conflict. Changes in the basic structure of the American economy had led to persis-

[3] In these early days, the Board and its staff were housed in the Treasury Building, as was the Comptroller of the Currency. Both the Secretary of the Treasury and the Comptroller of the Currency were members of the Board, *ex officio*. But physical and official proximity could not prevent extended controversy induced by a statute that created so much overlapping authority.

tent and pressing demands to allow national banks to establish branches. In the 1920s, it was the preoccupying business of the Office of the Comptroller to make decisions that would ultimately affect legislative action on the problem of branching.

Contrary to the expressed opinions of some historians, neither the Currency Act of 1863 nor the National Bank Act of 1864 prohibited branches of national banks. At mid-19th century, there was no apparent doubt about the right of banks to branch, and there is nothing in the legislative history of the 1863 and 1864 laws to suggest that branches of national banks would be precluded by their passage. Nevertheless, Comptroller McCulloch and his immediate successor, Comptroller Clarke, ruled that national banks could not have branches. Actually, the question of branch banking did not become a matter of wide discussion until the late 1890s, when branches were proposed as a means of making banking facilities available to small communities. But the force of branch-banking arguments was greatly reduced with the passage of a 1900 statute that reduced to $25,000 the capital requirement for a national bank in places of 3,000 or less. With the ensuing rapid creation of small banks, the turn-of-the-century argument for branch banking was undermined, and the potential of anti-branch lobbies was increased by thousands of new country banks.

In 1900, banks with branches accounted for only 2 percent of the resources of American banks. Twenty years later, they accounted for nearly 15 percent, suggesting that relatively large banks were expanding by acquiring branches. However, because of the rapid increase in the number of unit banks during this period, the number of branch-bank offices constituted only 6 percent of the total number of banking offices in 1920.

During the first quarter of the 20th century, the economic forces compelling the growth of branch banking tended to promote intracity rather than intercity branching. As cities pushed outward and increasing traffic congested the streets, banks found it progressively more difficult to reach households. Yet it was at precisely this time that the American middle class was becoming affluent enough to make household and small personal accounts profitable. In a society of spatially separated communities, where villages and hamlets flourished only a few miles apart, uncertain communication and bad roads slowed the establishment of branch offices outside the home city. Even before 1920, however, intercity branches were increasing in a dozen states, notably in California. By the mid-1920s, intercity branching was on its way to becoming the more important type, as banks moved to place offices in the burgeoning suburbs.

Underlying these changes, their character in part determined by the urbanization and then the suburbanization of a peripatetic population, were the increasing returns to scale in banking. The advantages of larger units were increased by technical advances in handling checks, making bookkeeping entries, and processing data, as well as by the proportionately greater use that big banks could make of free Federal Reserve services. More fundamental was the advantage to large units of first-class managerial talent; for in an increasingly complex world financial institutions, possibly more than any other business firms, benefited from the improving quality of management that, within certain limits, came with size.

Yet the specific course of branch banking in the United States was unquestionably diverted and shifted by statutory and regulatory resistance to basic economic forces. This resistance, though by no means universal, persisted in wide geographic areas. Even so, at both Federal and state levels, the trend after 1915 was toward liberalization of legislative judgments about branch banking.

In 1911, Comptroller Murray received from Attorney General Wickersham the opinion that the power to branch was not implied in the National Banking Act. In 1915, the Federal Reserve Board recommended national-bank branching within the main-office city or county, and a controversy that had smoldered for years erupted at the 1916 convention of the American Bankers Association, which adopted resolutions opposing branch banking.

By the early 1920s, anti-branching legislation was seriously inhibiting the growth of multi-office banking, leaving the large banks in some states to operate in ever more inefficient banking houses and encouraging in other states the growth of groups and chains. Through the persistent efforts of a succession of Comptrollers, some gains were made in the struggle to liberalize branch-banking laws. In 1921, Comptroller D. R. Crissinger urged limited branching of national banks in states that authorized state branch banking. When there was no Congressional response, he held that national banks might operate "limited-service" offices or tellers' windows wherever state branching was permitted. And Crissinger's immediate successor, Henry M. Dawes, though a vigorous opponent of branch banking, felt that national banks should have the same branching powers as their state counterparts. Upon Comptroller Dawes' request, Attorney General Daugherty ruled that national banks could operate limited-service offices within their city of location; within five years more than 200 of these branches were in operation.

The outcome of three years of noisy Congressional debate was the passage of the McFadden Act in 1927. For the first time, the law explicitly permitted national banks to open *de novo* branches. But many considered the McFadden Act an anti-branching bill, for it allowed members of the Federal Reserve System to establish new branches only within the limits of "the city, town or village in which said association is situated if such establishment and operation are at the time permitted to State banks by the law of the State in question."

Agitation to liberalize this restrictive legislation began almost at once. In his *Annual Report* for 1929, Comptroller Pole argued that the "country banking" system was being undermined by the high failure rate of small institutions and that holding companies were rapidly substituting for branch systems. Moreover, Pole was anxious to place national banks in a more favorable position in their competition with state banks. He proposed legislation to permit national banks to branch over their "trade areas," even if such branching occurred over state lines. When a few years later this same view was expressed by Senator Carter Glass and by spokesmen for the American Bankers Association, it appeared that serious branch-banking restraints might soon end. But once again the arguments of branch-bank supporters were blunted by other legislation, this time by Congressional acceptance of a plan of deposit insurance that promised to solve the problem of small-bank failures. The conclusion of the argument was insertion of the provision in the Banking Act of 1933 that remains the rule today—that national banks are subject to the same geographic limitations on branching as those imposed on their state-chartered competitors in the state in which they operate.

Meantime, Comptrollers Crissinger, Dawes, McIntosh, and Pole repeatedly voiced their concern over the failure of the national banking system to maintain its relative strength. In 1927, McIntosh noted that in the preceding three years 253 national banks had converted to state charters, taking with them aggregate resources of more than $1 billion. Moreover, he observed, total resources of national banks had dropped from about 75 percent of the total of commercial-bank resources in 1884 to about 46 percent in

1926. Yet passage of the McFadden Act reversed the swing from national to state charters, and it was apparent in retrospect that retrogression of the national banking system had not been the consequence of serious net losses on account of conversions. Instead, state banks that were members of the Federal Reserve System were simply growing much faster than national banks.

Despite their deep concern for the unfavorable competitive position of the national banking system, Comptrollers Dawes, McIntosh, and Pole adopted progressively more restrictive chartering policies. Warned by the spreading wave of bank failures in the agricultural midlands, Comptroller McIntosh in particular reduced sharply the average approval rate of applications, and Pole continued this policy. Moreover, the Office of the Comptroller continued to tighten and standardize examination procedures. By 1930, most of the principles of modern bank examination had been forged, none too soon in view of the problems resulting from the Great Depression.

IV.

The trauma of the Great Depression affected the entire business community. But more than any other business, commercial banking was especially hard hit. The continuing slide of 1929-1933 was attributed, not without reason, to the failure of the banking system to hold up under stress. A large part of the electorate, not realizing that it was the duty of the central bank to provide liquidity for commercial banks, laid the entire blame on commercial bankers themselves. In the whole history of our country, no single group was ever so bitterly castigated. Bankers were not entirely without fault, of course, but the disintegration of the financial system, which became very nearly complete in the days just preceding the inauguration of Franklin D. Roosevelt, was the result of causes far more serious than risky banking practices and an occasional dishonest banker.

The real heroes of the banking crisis were the personnel of the Office of the Comptroller of the Currency and their counterparts in the Federal Reserve and the state banking departments. Unstinting work, far beyond the call of duty, brought the financial system back to something like normal working order by 1935.

The problems confronting officials of the Treasury, the Federal Reserve, and the Office of the Comptroller were formidable. On March 6, as one of the first moves of his administration, Franklin D. Roosevelt ordered the suspension of all banking transactions for a period of four days. On March 9, 1933, Congress passed the Emergency Bank Act, which approved and confirmed the Proclamation of March 6. The Act vested in the President power to close the banks and gave the Secretary of the Treasury authority to regulate the business of the banks during such emergency period as the President might designate. A major provision, one that did much to stabilize the banking community, gave authority to the Comptroller of the Currency to appoint conservators who would husband the assets of national banks on behalf of depositors and creditors and bring about the reorganization of banks that could be made going concerns. Other provisions authorized national banks to issue preferred stock and gave the Reconstruction Finance Corporation authority to purchase that preferred stock if the Secretary of the Treasury, with the approval of the President, deemed new funds necessary for the reorganization of a bank. To tide certain institutions over the immediate emergency, the Comptroller of the Currency was authorized to permit banks under conservators to receive new deposits, which were to be segregated and made subject to withdrawal without restriction.

The President at once issued his Proclamation of March 9, which extended until further notice the terms of the Proclamation of March 6. The next day, the President by Executive Order authorized the Secretary of the Treasury and the appropriate supervisory authority in each state to permit the opening of banks, on the condition that state nonmember banks obtain a license from a state authority and member banks obtain a license from the Secretary of the Treasury. Procedurally, applications for a license from the Treasury were filed with Federal Reserve banks, and, upon approval by the Secretary, issued by Federal Reserve banks.

On March 11, President Roosevelt announced a definite schedule for the reopening of the country's commercial banks. By April 12, 1933, the licensing program was completed. At that time, 4,789 national banks, 636 state member banks, and 7,392 nonmember banks, or a total of 12,817, were open for business.

Although the reopening of the banks had proceeded smoothly, supervisory agencies were left with an almost overwhelming task of reconstruction. As of March 16, 1933, 1,070 banks under the jurisdiction of the Comptroller, with deposits of nearly $890 million, were in receivership. Not quite two years later, at the end of 1934, depositors of these banks had received about half the amount due them, but 946 banks were still going through the painful process of winding up their affairs.

The most constructive work performed by the Comptroller's Office was the resuscitation of national banks remaining unlicensed on March 16. There were 1,417 unlicensed banks, with deposits of almost $2 billion, under the jurisdiction of the Comptroller. For most of these banks, the Comptroller appointed conservators, who during the period of conservatorship were to protect the assets of their banks, following strict rules regarding the paying out of funds. During the remainder of 1933 and all of 1934, the job of getting these banks on their feet continued. On the whole, results were remarkably favorable. Of the 1,417 banks, 1,093 were reorganized under old or new charters, absorbed by other national banks, or had approved plans for reorganization; 30 went into voluntary liquidation, paying their depositors in full; and 294 banks were placed in receivership. At the end of 1934, the remaining depositor liability of the 1,417 banks amounted to only 5 percent of the amount of deposits frozen at the end of the banking holiday.

Preoccupied as they were with rescue operations during the period 1933-1935, neither the Comptroller of the Currency nor state authorities could give much thought to future chartering policy. Although 800 new national charters were approved in these three years, more than 700 of them were worked out with the Comptroller's cooperation to save banks in difficulty.

Of the many post-depression changes in public-policy attitudes, none was more drastic than the new view of bank chartering. The ruin of the banks had been the consequence of many causes, some in a sense more fundamental than "overbanking." Yet the excesses of chartering in the period 1880-1925 had been part of the problem, for the failures that began a decade before the economic disintegration of the early 1930s were a response to the previous high rate of bank investment. Nearly everyone agreed that free banking, in the sense of continuing competition between the Comptroller and state authorities, should stop and that some kind of Federal control should restrain bank formation under state charters.

As it turned out, the Federal Deposit Insurance Corporation became the agency to exercise this control. By the end of 1935, more than 90 percent of the country's commercial banks were "admitted to insurance." State authorities kept their charter powers, but the FDIC could withhold deposit insurance and so greatly influence the competitive position of a new

bank. Friction between the Comptroller and the new agency developed over the question of division of supervisory responsibility, but in 1938 the Comptroller, the Federal Reserve, and the FDIC agreed to a formal division of labor.

Selectivity in chartering had begun in the mid-1920s at both state and Federal levels, and even in the absence of economic catastrophe increased care would have been taken in creating new banks. But the attitudes of extreme caution emerging after 1935 were influenced by the depression psychosis, and bank supervisors, like the bankers they regulated, considered their chief business to be the preservation of banks. After the repair work of 1931-1935 was completed, there would no longer be business as usual.

As early as 1934, Comptroller O'Connor announced a policy of "great caution" in approving charters and *de novo* branches. His successor, Preston Delano, was even more cautious, and on two occasions could report that no primary national-bank charters had been issued during the previous year. Comptroller Ray M. Gidney, who succeeded Delano in 1953, was inclined to somewhat greater liberality. But the statistics of bank charters during the quarter century from 1935 to 1960 testify to the substantial withdrawal of the Office from bank chartering. In the decade 1936-1945, 480 new state banks and 55 new national banks were chartered; the figures for the decade 1946-1955 were 705 state and 156 national banks, and for the five-year period 1956-1960, 435 state and 124 national banks. Thus, in the quarter-century following the Great Depression, national-bank charters accounted for less than one-fifth of the nearly 2,000 banks organized.

One of the reasons for such a low rate of national-bank charters was the comparatively low return to capital invested in commercial banking. But the more obvious reason was the attitude of the post-depression Comptrollers, who were clearly reluctant to admit new banks to a competition that could become dangerous. Decisions to charter new banks went from the extreme of free banking to the extreme of unduly restricted approvals.

Until well after the end of World War II, one characteristic of banking remained invariant: with a few remarkable exceptions, bank managements were themselves tied to the past—plodding and unimaginative, with a marked tendency to be hereditary. A few daring and creative bankers attempted such innovations as extensive consumer lending, but they were considered foolhardy by their less aggressive colleagues. The consequence of collective indisposition to meet the needs of households was the growing relative importance of nonbank intermediaries—savings and loan associations, mutual savings banks, credit unions, life insurance companies, and uninsured pension funds. Generally speaking, commercial banks had increased in relative importance during the inflationary periods of two world wars and their immediate aftermaths. But once the rate of growth of the money supply returned to something like postwar normals, the nonbank intermediaries grew relatively as commercial banks retrogressed.

In the middle 1950s, perceptive members of the financial community noted that commercial banks seemed inclined toward more aggressive competition, both among themselves and with the other intermediaries, than had been observed for a generation. Young managers, many of them recruited from colleges and universities into organized training programs, were becoming policymaking officials. Unlike their fathers and grandfathers, they understood that, in an economy committed to economic stabilization, old rules of thumb about loan-to-deposit ratios and capital-risk asset ratios were no longer reliable guides to action. Furthermore, they were willing to introduce new systems for handling the swelling tide of paper flowing through the banks, and so they succeeded in substantially reducing costs.

The result of these changes was a widespread recognition of the prospect of increased profits, which by the late 1950s drove imaginative managers to seek an escape from the antiquated regulatory apparatus of Federal and state authorities.

As Senate passage of the Financial Institutions Act of 1957 testifies, there was support for legislation that would codify the complex and over-lapping Federal banking law and remove barriers to improving the competitive position of commercial banks. When the House of Representatives failed to enact this bill, simplification and codification of the banking law were thereby postponed, for these objectives could be reached only through Congressional action. But many of the other aims of the Act could be achieved by administrative decision. It was in this setting that James J. Saxon became Comptroller of the Currency on November 16, 1961.

The consequences of the new appointment were immediate and extensive. They are apparent in the figures, particularly those on chartering and branching. In 1961, Comptroller Gidney's last year in office, 97 applications for new charters were received. In 1962 there were 176 such requests, the number soaring to 490 in 1963, and 468 in 1964. This total of 1,134 charter applications was more than had been submitted to the Office of the Comptroller in the previous 20 years. In the four-year span 1962-1965, the Office granted 513 new charters, while state authorities, urged to greater liberality by the competition, granted 502. There was a calculated attempt to increase banking resources in trade areas where they were deficient; and though a careful economic analysis of the need for a new institution preceded charter approval, there was no longer an assumption that commercial banks are entitled to complete protection from competition. However, in the *Annual Report* for 1964 it was noted that applications from particular areas would be rejected once a certain level of investment was reached. Actually, the rate of charter rejections for 1965 was 70 percent.

As early as 1935, branch banks controlled more than one-half the resources of commercial banks. The trend toward branch banking continued, though the prohibitory legislation of some states assured a stronghold of unit banking largely between the Rocky Mountains and the Mississippi River. From the end of 1960 to the end of 1965, the number of national banks maintaining branches rose from 905 to 1,331, an increase of 48 percent. Meantime, the number of branches operated by national banks increased from 5,325 to 8,754, a jump of 64 percent. (Branches of state banks rose in this interim from 4,918 to 6,732, an increase of 37 percent.) At the end of 1965, branch-bank offices accounted for almost 64 percent of the country's 29,000 banking offices, and controlled approximately two-thirds of the banking resources of the country.

These data provide a partial measure of the changes brought during the administration of Comptroller Saxon, but they fall far short of indicating the extent of his administrative changes. On a few occasions, Comptroller Saxon was able to secure the passage of recommended legislation, as, for example, when he succeeded in obtaining transfer of authority over the trust powers of national banks from the Federal Reserve to the Comptroller.[4] But, in general, legislation aimed at removing obsolete statutory prohibitions was opposed by the Board of Governors of the Federal Reserve System, and Comptroller Saxon was forced to achieve many of his goals by changes in administrative rules and regulations. His course was made easier by the statutes granting

[4] This statute was enacted on September 28, 1962. For details, see *Annual Report* of the Comptroller of the Currency, 1963, p. 13.

permissive powers to the Comptroller of the Currency, which are perhaps the broadest drawn of all the regulatory laws.

Decisions made by Comptroller Saxon pursuant to these statutes covered a range far too extensive for discussion in this article.[5] Their broad scope and pervasive nature may be judged from the fact that they treated such subjects as: the use of preferred stock, capital debentures, and unsecured promissory notes in commercial-bank financing; stock options and employee stock-purchase plans; the underwriting of public securities; permissible investment securities; trust administration; collective investment of managing agency accounts; improvement and development loans, business and commercial loans, and construction, residential, and condominium loans; lease financing, factoring, and export transactions; loan limits; mortgage servicing; community development projects; computer and payroll services; and corporate savings accounts.

Many of the reforms initiated by Comptroller Saxon had been matters of public discussion for many years; indeed, as Chairman Patman of the House Committee on Banking and Currency implied, a number of the changes would have been legislated by the Financial Institutions Act of 1957 had it passed.[6] Moreover, in 1962, an advisory committee appointed by the Comptroller proposed policy changes closely comparable in many respects to those he later instituted.[7] While there was thus a broad base of support for the innovations that were introduced, the historic pattern of opposition was repeated by those who feared the new competition that would result from more liberal rules for national banks —and by Federal and state authorities who resisted changing the old rules of the game.

V.

This sketch of the historic role of the Comptroller of the Currency leads inescapably to certain conclusions of interest to students of government and economics, to public servants, and to members of the financial community. We may summarize our appraisal as follows.

1. The Comptroller of the Currency has vast administrative powers that have been exercised under a statute so broadly drawn as to permit wide latitude in judgment. As a Federal administrator, the Comptroller affects resource allocation in banking, and more broadly in finance, his decisions determining in large part the number and size of the institutions, the banking structure, and the nature of competition in the market.

2. With the exception of the Presidency itself, no office in government reflects more keenly the personality and style, the intellectual equipment and philosophy, of its incumbent. The performances of the 21 Comptrollers who preceded Comptroller Camp have ranged in quality from the routine administration of a meddlesome, intrusive bureaucracy, to imaginative and creative reshaping of the competitive environment of financial institutions. The inhibiting influence of

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[5] A summary of the principal changes is contained in the Comptroller's *Annual Report* for 1963. The theme section of this report, *Years of Reform: A Prelude to Progress*, is contained on pages 1-32. Additional insights may be obtained from the appendices, which contain addresses, selected Congressional testimony, and selected correspondence of Comptroller Saxon. The *Annual Report* for 1964 and the *Annual Report* for 1965-1966 provide further detailed material illuminating the philosophy of the 21st Comptroller of the Currency.

[6] See *Consolidation of Bank Examining and Supervisory Functions*, Hearings before the Subcommittee on Bank Supervision and Insurance, Committee on Banking and Currency, House of Representatives, 89th Congress, 1st Session, on H.R. 107 and H.R. 6885, pp. 289-293.

[7] *National Banks and the Future*, Washington, D. C.: U.S. Government Printing Office, 1962.

the permanent staff of subordinates, while certainly not absent, has probably been less constricting than that of any other commission, bureau, or department of the Federal government.

3. The Comptroller of the Currency has nevertheless been historically subject to great pressures from the banking industry, directly from the managers themselves or organized banking groups, and indirectly through officials of the several state and Federal agencies. These pressures spring from two basic motivations. The first is purely selfish, as when the chief operating officer of a bank (or his representative in Congress) protests a charter or the approval of a new branch on the grounds that "dangerous" competition would ensue. The other, more subtle, pressure is often ostensibly in the public interest and may be well-intentioned. It comes from an official in some other agency of government who believes that the conservative, prudent decision in the regulation of banking is to take no action at all. The consequence has been great time lags in the approval of changes required by a growing economy.

Victor Hugo has remarked the impossibility of containing an idea whose time has come. It is similarly impossible to resist, through regulation, the inexorable outcome of economic forces, provided that the economy is not in the vise of totalitarian control. The rulings of long-dead administrators may for a time distort and delay the allocation of resources dictated by the market system, but the restraints so exercised begin ultimately to retard the rate of economic growth demanded by contemporary society. At last, continuing adherence to the rules of another generation becomes more dangerous than the adoption of new rules, however they may seem to break with old notions of "sound" banking. In the modern setting of a stabilization policy guaranteed to prevent wide swings in economic activity, venturing in the public interest, like venturing in the private interest, becomes progressively less risky.

► RICHARD S. BEATTY

The Incidental Powers of National Banks

Section 24 of the National Bank Act provides that a national bank may:

> exercise by its board of directors or duly authorized officers or agents, subject to law, all such incidental powers as shall be necessary to carry on the business of banking

It is through this deceptively simple phrase that much of the modern activity of national banks is authorized.

The Act identifies the functions which, at the time of its passage in 1863, were generally considered to be basic to "the business of banking": discounting and negotiating promissory notes and other evidence of debt, receiving deposits, dealing in exchange, coin and bullion, loaning money on personal security and obtaining, issuing and circulating notes. But it provides no guidance to the powers deemed "incidental" to the business of banking. This question has been the subject of continuing debate and judicial interpretation, and today several law suits of more than routine importance are pending on this issue.

The purpose of this article is to trace the origins of the incidental powers language, and to identify the working principles which courts have evolved in applying it to particular practices.

I. *What Congress Had in Mind*

The legislative history of the National Bank Act is sparse and generally unrevealing with respect to the question of

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bank powers. However, it is generally agreed that the principal provisions of the Act were taken largely from the free banking laws of New York, Ohio, and other states.[1]

The New York Free Banking Act of 1838, in particular, was carefully examined and liberally followed by the drafters of the Federal act. The New York act contained a provision concerning incidental powers strikingly similar to that ultimately incorporated into the Federal act. It provided at Chapter 260, Section 18 that:

> Such association shall have power to carry on the business of banking, by discounting bills, notes and other evidences of debt; by receiving deposits; by buying and selling gold and silver bullion, foreign coins and bills of exchange, in the manner specified in their articles of association for the purposes authorized by this act; by loaning money on real and personal security; *and by exercising such incidental powers as shall be necessary to carry on such business* (emphasis supplied)

There was also an expression of the New York Court of Appeals, roughly contemporaneous with the drafting and passage of the Federal act, interpreting the incidental powers section of the New York law in language which has been regularly quoted ever since by interpreters of the Federal act:

> The implied powers [of a bank] exist by virtue of the grant [to do the banking business], and are not enumerated and defined; because no human sagacity can foresee what implied powers, may in the progress of time, the discovery and perfection of better methods of business, and the ever varying attitude of human relations, be required to give effect to the expressed powers. They are therefore left to implication.[2]

It seems likely that the sub-committee of the House Committee on Ways and Means (consisting of Representatives Spalding and Corning of New York and Hooper of Massachusetts), which made a study of the New York act and then prepared the original draft of the Federal bill in December of 1862, was aware of Justice Comstock's interpretation of the New York act when it inserted similar language into the Federal act. This may account for the absence of any language enumerating or defining the incidental powers of a national bank. If a more restrictive result had been intended, the identification of incidental powers would probably not have been left to implication. However, such an explanation of the intent of Congress must remain a logical speculation.

II. *Contemporaneous Administrative Interpretations*

One searches in vain the early reports of the Comptroller of the Currency for some guide to the contemporary attitude taken by the supervisor of the new national banking system on the matter of bank powers. Comptroller Hugh McCulloch, in his first Report of November 28, 1863, noted inconsistencies and ambiguities in the Act, but did not include the incidental powers language among them. The first reference to the incidental powers clause is in the Appendix to the 1886 Report. There, in a digest of court cases, it was pointed out that "to the enumerated powers of national banking operations are to be superadded all the powers incidental to the business of banking. (*Pattison v. Syracuse National Bank*, 80 N.Y. 82.)" Following this section, are 15 other sections setting forth some judicially-approved powers, most of which are not among the enumerated powers and therefore were presumably "superadded" or incidental. These include, among others, engaging in the business of dealing in government securities, certify-

[1] *History of Banking*, John J. Knox, New York, 1900, p. 97.

[2] *Curtis* v. *Leavitt*, 15 N.Y. 9 (1857).

ing checks, taking stock in compromise of a claim, and purchasing real estate to secure a pre-existing debt. The 1886 Report also contains a section on *ultra vires* which lists four functions found to be beyond the powers of national banks: dealing in stocks, purchasing negotiable paper, lending credit and taking mortgages on real estate.

This recitation of cases is provided without any comment by the reporting Comptroller. The powers approved by the courts presumably were exercised with the consent of the Comptroller, but it is not clear that the Comptroller acquiesced in the *ultra vires* declarations in view of the position taken by subsequent Comptrollers that national banks should be permitted, *inter alia*, to take mortgages on real estate as security for loans and to engage in limited dealing in securities. Thus, the apparent attitude of the early Comptrollers, as reflected in their reports, was that the incidental powers clause should not be interpreted to cover only direct methods of accomplishing the enumerated powers, and that certain fundamental categories of business which were deemed risky should be prohibited. Within these two reference points, powers were evidently evaluated on the basis of the circumstances presented in each case.

III. *Judicial Interpretation*

In the century since passage of the National Bank Act, the question of national bank powers has been before courts at every level on innumerable occasions. Four underlying principles or rules of construction may be discerned in their decisions, although they are usually spelled out in detail only in opinions of the United States Supreme Court. The first principle is that there is no clear cut definition to which a court can look in assessing what is a proper incidental power, and therefore each asserted power must be evaluated independently in the light of factors deemed appropriate by the court. With the two broad exceptions embodied in the second and third principles, no categories of activity appear to have been excluded *eo nomine*.

The second principle, and one which is perhaps the most significant in terms of emphasis in opinions at all levels, is that courts will not permit national banks to engage in activities, asserted to be incidental powers, if the activities in question involve any substantial risk to the bank or its assets.

The third strain which runs through most of the cases is that the proposed activity must bear at least a reasonable relationship to the regular business in which the bank is engaged. The courts do not seem to have taken a narrow or restrictive view in judging the degree of nearness or relatedness of a proposed incidental power. An enumeration of some of the powers found to be incidental appears later in this article.

A fourth rule of construction, which has been enunciated less frequently but which is not inconsistent with the others, is that an incidental power may not be implied if, by a fair construction of relevant statutes, it is found to be proscribed. This is not a situation which arises often, since there are few negative or restricting sections in the National Bank Act. Most of the Supreme Court cases discussed, *infra*, do not involve this point, but the 1924 opinion in *First National Bank* v. *Missouri*, 263 U.S. 640, is a clear application of this standard and may be considered representative.

Only Supreme Court cases will be treated in detail in this article. The Court has decided a large number of cases over the years which directly or indirectly involve the question of national bank powers. Those discussed here were selected because they deal most specifically with the issues common to all questions of powers, because they cover virtually the entire period from passage of

the Act to the present, and because they are reasonably representative of the other cases.

Apparently, the first occasion for the Supreme Court to pass on a proposed power, not specifically enumerated, was the case of *Merchants Bank* v. *State Bank*, 77 U.S. 604 (1870). Greatly simplified, the facts are as follows: the cashier of defendant bank certified as "Good," X's check for $600,000. Plaintiff bank took this check and delivered $600,000 in gold certificates to defendant's cashier. Two days later, the gold certificates had disappeared, and it was discovered that X had no account with the defendant. One defense made by defendant, was that it had no power to certify the check because "the banks are the financial agents of the government and their officers are public functionaries, to be kept within the strict line of power and duty." (19 Law Ed 1015)

The Court discussed the particular function in question, assessed the risk involved, briefly noted the ways in which it was related to the regular functions of the bank, and then concluded:

> A bank incurs no greater risk in certifying a check than in giving a certificate of deposit. . . .
>
> The practice of certifying checks has grown out of the business needs of the country. They enable the holder to keep or convey the amount specified with safety. They enable persons not well acquainted to deal promptly with each other, and they avoid the delay and risks of receiving, counting, and passing from hand to hand large sums of money. (pp. 647-648.)

In 1875, the Supreme Court decided what has come to be considered one of the leading cases on the question, *First National Bank* v. *National Exchange Bank*, 92 U.S. 122. Here, a national bank indebted to a partnership had an opportunity to settle the debt for $20,000, but chose instead to settle by paying $40,000 for some railroad and mining stock of dubious value. The case arose when the bank tried to recover its money, claiming it was not bound by the transaction since it was *ultra vires*. The Court quoted Section 24 (seventh), and proceeded as follows:

> Authority is thus given to transact a banking business as is specified, and all incidental powers necessary to carry it on are granted. These powers are such as are required to meet all the legitimate demands of the authorized business, and to enable a bank to conduct its affairs, within the general scope of its charter, safely and prudently. This necessarily implies the right of a bank to incur liabilities in the regular course of its business, as well as to become the creditor of others. Its own obligations must be met, and debts due to it collected or secured. The power to adopt reasonable and appropriate measures for these purposes is an incident to the power to incur the liability or become the creditor. (p. 27.)

In 1906, the Court in *Wyman* v. *Wallace*, 201 U. S. 230, was presented with a dispute over the right of a national bank to borrow money, a power, it was urged, not expressly or impliedly conferred. The Court responded as follows:

> The question, therefore, is, whether a national bank, finding itself embarassed, with a large amount of assets, much in excess of its obligations, yet without the cash to make payment of those which are due and urgent, can borrow to meet those pressing demands. A very natural question is, why not? It is not borrowing money to engage in new business. It simply exchanges one creditor for others. There may be wisdom in consolidating all of its debts into the hands of one person. At least such a consolidation cannot be pronounced beyond its powers * * *. In the case of an individual it would be a legitimate and often a wise transaction. It is not in terms prohibited by the national banking act.

In the case of *Miller* v. *King*, decided in 1912 (223 U.S. 505), the Court was

confronted with a situation in which a customer had assigned a judgment to the bank with instructions to collect it and pay the proceeds as he, the customer, should direct. The bank's attorney collected the judgment but misappropriated the proceeds. The bank brought suit against the attorney. The attorney defended with the argument that the bank had no title to the judgment because it lacked the power to be a trustee of an express trust. The Court provided the following explanation for its ruling in favor of the bank:

> The judgment was affirmed, and no federal question is presented . . . except on the theory that, under Revised Statutes, §5136, a national bank could not act as trustee of an express trust, and that therefore the suit was absolutely void. . . .
>
> A National Bank cannot act as a technical trustee and hold land for the benefit of third persons. It cannot, for example, act as trustee under a railroad mortgage, nor take title to property to be held for the life of the grantor, with the remainder to his children. . . . But under Revised Statutes, §5136, "it may exercise all such incidental powers as shall be necessary to carry on banking," and it may therefore act as a fiduciary and occupy a trust relation in matters connected with the business. It may do those acts and occupy those relations which are usual or necessary in making collection of commercial paper and other evidences of debt. It is both usual and proper for the legal title to negotiable instruments to be vested in a bank by mere endorsement for purposes of collection, holding the proceeds as the endorser directs. There is no difference in law if the title is conveyed by a lengthier and more formal instrument.
>
> There was nothing in the transaction so disconnected with the banking business as to make it in violation of Rev. Stat. §5136. . . . (pp. 510-511.)

In 1913, a case came before the Court in which a power was approved solely on the basis of "the convenience of the business." In *Clement National Bank* v. *Vermont*, 231 U.S. 120, the state had levied a tax on interest-bearing deposits, including those in national banks. As a service to its depositors, the bank contracted with the state to pay this tax. The validity of the tax was not disputed, but the bank argued that its contract to pay it was *ultra vires*. For the following reasons, the bank lost the argument:

> The applicable principles are not in dispute. The Federal statutes relative to national banks constitute the measure of authority of such corporations, and they cannot rightfully exercise any powers except those expressly granted or which are incidental to carrying on the business for which they are established. [cases.] These incidental powers are such "as are required to meet all the legitimate demands of the authorized business, and to enable the bank to conduct its affairs, within the general scope of its charter, safely and prudently." [cases.] The bank was authorized to receive deposits. Arising from these deposits were credits to the depositors, forming part of their property and subject to the taxing powers of the state * * * . Further, it would seem to be highly appropriate that, the credits of depositors being taxable by the state, the bank should be free to make reasonable agreements, and thus promote the convenience of the business, with respect to the making of returns * * * . (p. 140.)

In 1924, the Court decided the celebrated case of *First National Bank* v. *Missouri*, 263 U.S. 640, a *quo warranto* action initiated by the State of Missouri to determine the authority of a national bank to establish a branch in St. Louis. The bank and the Comptroller of the Currency had taken the view that the power to branch could be implied from the power to engage in the banking business. The Court looked at other provisions of the Act which referred to "the place" where its operations of discount and deposit were to be carried out, "an office" for transaction of the bank's "usual business," and the absence of any provision for adjusting capital to an increase in

the number of offices, and concluded that:

> . . . it is wholly illogical to say that a power which, by fair construction of the statutes, is found to be denied, nevertheless exists as an incidental power. Certainly, an incidental power can avail neither to create powers which, expressly or by reasonable implication, are withheld, nor to enlarge powers given; but only to carry into effect those which are granted.

The 1927 case of *First National Bank* v. *Hartford*, 273 U.S. 548, dealt with a situation where a state taxed the shares of national and state banks, but not of other types of financial intermediaries. R.S. 5129 prohibits a state from taxing national banks at a greater rate than is assessed on other "moneyed capital" in the hands of state citizens. Capital is "moneyed capital" if it is used in a business that competes with national banks. The Court found the state tax discriminatory and hence invalid.

> It is argued that national banks are not authorized to deal in bonds or other evidence of indebtedness and that Section 5159 was not intended to protect them from discriminatory taxation in favor of moneyed capital employed in a business in which they may not engage. But it is not necessary for the purposes of this case to determine the precise limits of their powers. They are given authority, in addition to loaning money, to exercise all such "incidental powers" as shall be necessary to carry on the business of banking * * *.
>
> Here plaintiff is shown to have investments in real estate mortgages and to be engaged in selling them. The sale of mortgages and "other evidences of debt" acquired by way of loan or discount with a view to reinvestment is, we think, within the recognized limits of the incidental powers of national banks. (pp. 559-560.)

In 1940, the Court in *Colorado National Bank* v. *Bedford*, 310 U. S. 41 (1940), received a challenge to a national bank's incidental power to conduct a safe-deposit business. Colorado levied a sales tax on safe-deposit services. The bank argued that the levy constituted an illegal tax on a Federal instrumentality, and Colorado argued, among other things, that the safe-deposit business was not an integral part of a national bank's legitimate business. (The bank conducted its safe-deposit business as a department of the bank, not via a subsidiary corporation.) The Court, basing its conclusion that the power was incidental on the apparent fact that the practice was widespread in the industry, and rejecting the argument that the specific provision for bank investment in a safe-deposit corporation implied a lack of authority to perform that function directly, said:

> Though the national bank's usefulness as an agency to provide for currency has diminished markedly, their importance as general bankers show a constant growth. We may assume that national banks possess only the powers conferred by Congress. These are set out in R.S., Section 5136 as frequently amended and include "all such incidental powers as shall be necessary to carry on the business of banking," with the proviso "that in carrying on the business commonly known as the safe-deposit business the association shall not invest in the capital stock of a corporation organized under the law of any state to conduct a safe-deposit business in an amount in excess of [15 percent of its capital and surplus]* * * *" . . . The language of the proviso of Section 24, just quoted, is the language suitable to impose restrictions on a recognized power, not the language that would be used in creating a new power. As the limitation on the power to invest in real estate protected in a measure customers and stockholders from risky investments * * *, the bank's own investment in safety deposit facilities evidently did not seem to Congress to require the same regulations as the purchase of stock in a safe-deposit corporation * * * The obvious fact, known to all, is that national banks do and for many years have carried on a safe-deposit business.

> State banks, quite usually, are given the power to conduct a safe-deposit business. We agree with the appellant bank that such a generally adopted method of safeguarding valuables must be considered a banking function authorized by Congress. (pp. 48-50.)

The most recent Supreme Court case on the question is *Franklin National Bank* v. *New York*, 347 U.S. 373 (1954), one involving an attempt by the state Attorney General to enjoin a national bank from using the word "savings" in connection with its business, on the ground that a state statute prohibited its use by anyone other than a mutual savings bank or a savings and loan institution. The Attorney General won in the state courts, but lost in the United States Supreme Court which explained its decision as follows:

> The Federal Reserve Act provides that a national bank "may continue hereafter as heretofore to receive time and savings deposits and to pay interest on the same". . . . The National Bank Act authorized national banks to receive deposits without qualification or limitation, and it provides that they shall possess "all such incidental powers as shall be necessary. . . ." (347 U.S. at 257-376.)
>
> We are unable to support the contention that the authorization for national banks to receive savings deposits is limited or qualified because of the expression that they may "continue hereafter as heretofore" to do so. It appears that previous to the enactment, acceptance of such accounts by national banks had been usual but was not expressly authorized. We do not think the Federal Reserve Act should be construed to freeze individual banks or those located within any state to the customs and practices preceding the statute. We read the act as declaratory of the right of a national bank to enter into or remain in that type of business. That has been the administrative construction, and we think it is correct.
>
> Nor can we construe the two Federal Acts as permitting only a passive acceptance of deposits thrust upon them. Modern competition for business finds advertising one of the most usual and useful weapons. We cannot believe that the incidental powers granted to national banks should be construed so narrowly as to preclude the use of advertising in any branch of their authorized business. . . . (p. 377.)

Throughout this entire period, lower courts, Federal and state, were passing on a great number of asserted powers, generally in the same spirit which animated the Supreme Court—although, from time to time, a particular court might apply either a noticeably more restrictive or considerably more liberal standard. Among the powers approved by lesser courts are those: to construct a building larger than needed for its banking house for the purpose of renting the excess space to others; [3] to buy commercial paper and sue to collect it; [4] to give a bond to secure state deposits; [5] to purchase corporate stock at its own execution sale; [6] to buy and operate a wagon manufacturing concern in an effort to collect a debt; [7] and to warrant title to property conveyed by it.[8]

On the other hand, lower courts have found *ultra vires*, attempts by national banks to secure a private depositor; [9] to subscribe to a public or private enterprise; [10] to become a member of a partner-

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[3] *Brown* v. *Schleier*, 118 F. 981 (8th Cir. 1902) *aff'd.*, 194 U.S. 18 (1904).

[4] *Steward* v. *Atlantic National Bank*, 27 F. 2d 224 (9th Cir. 1928).

[5] *Nebraska* v. *First National Bank*, 88 F. 947 (D.C. Neb. 1898).

[6] *American National Bank* v. *National Wall Paper Co.*, 77 F. 85 (8th Cir. 1896).

[7] *Atherton* v. *Anderson*, 86 F. 2d 518 (6th Cir. 1936), *rev'd on other grounds*, 302 U.S. 643 (1937).

[8] *Farmers' & Miners' Bank* v. *Bluefield National Bank*, 11 F. 2d 83 (4th Cir. 1926), *cert. den.* 271 U.S. 669 (1926).

[9] *Security Realization Co.* v. *Henderson*, 120 F. 2d 449 (9th Cir. 1941).

[10] *Robertson* v. *Buffalo County National Bank*, 40 Neb. 235, 58 N.W. 715 (1894).

ship; [11] and to buy and sell cotton.[12]

Many of the reported decisions of lower courts embody no conscious application of standards such as those which have guided the Supreme Court. Both in instances where the lower courts have gone farther, and in those cases in which a more restrictive result has been reached, it is apparent that the courts were principally swayed by considerations of current local needs and conditions. In the great majority of reported cases, however, the result reached was not inconsistent with the general principles applied by the highest court.

In summary, then, a review of a century of judicial construction of the incidental-powers clause discloses a consistent and firm application of the prohibition against activities inherently risky. Otherwise, the attitude of the courts, especially at the highest level, has been responsive to the developing requirements of "the banking business" and has generally been unencumbered by restrictive preconceptions.

IV. *Current Litigation*

Many of the services offered today by national banks are based on authority implied from the incidental-powers clause. Indeed, any function which is not among the relatively few specifically-enumerated powers in the National Bank Act must, if it is proper, by definition be incidental. Few of these services have been challenged, but several are the subject of litigation now pending at various levels in the Federal courts. Whether national banks have the incidental power to act as agent for the issuance of insurance "incident to banking transactions," [13] or to pick up and deliver funds to customers, are questions which will soon be answered by the courts. The results in these cases may shed new light on the incidental services which national banks routinely offer in the last third of the 20th century.

[11] *Merchants' National Bank* v. *Wehrmann,* 69 Ohio St. 160, 68 N.E. 1004 (1903) *rev'd on other grounds* 202 U.S. 295 (1906).

[12] *First National Bank* v. *McKown,* 73 Okla. 310, 176 P. 245 (1918).

[13] The March 31, 1967 order of the United States District Court for the Northern District of Georgia, granting judgment against a national bank and the Comptroller on this question, did not reach the incidental-powers question directly, since in the Court's view the proposed service was specifically prohibited by other sections of the National Bank Act. The case is now on appeal.

► GEORGE J. BENSTON

Substandard Loans

In appraising the condition of national banks, examiners "classify" loan portfolios according to whether the loans are "substandard," "doubtful," or "loss." *Substandard* loans are described as those that ". . . have a positive and well-defined weakness or weaknesses which jeopardize the liquidation of the debt." [1] "Defined in a general way, a substandard loan is a bank asset inadequately protected by the *current* sound worth and paying capacity of the obligor, or pledged collateral, if any." [2] However, "Potential but unrealized weaknesses are not sufficient cause for a substandard classification." [3] *Doubtful* loans are those where ". . . collection or liquidation in full, on the basis of currently existing facts, conditions and values, is highly questionable and improbable." [4] "Loans classified as *loss* are considered uncollectible and of such little value that their continuance as active assets of the bank is not warranted." [5]

In this study, the analysis is confined to substandard loans. The purposes are to describe the changes which have taken place, and to determine which characteristics of banks are related to substandard loans so that their future course may be predicted.

I. *The Source of the Data*

Data were collected from a stratified random sample of national banks in the Seventh National Bank Region (Illinois and Michigan). Generally, individual

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[1] *Examination Policy Guidelines,* Office of the Comptroller of the Currency, p. 6.
[2] *Ibid.,* (emphasis in original).
[3] *Ibid.,* p. 7.
[4] *Ibid.*
[5] *Ibid.*

TABLE 1

Illinois and Michigan National Banks Universe and Sample

Total loans (millions of dollars)	Number of banks	Percentage sampled	Number sampled
$100 and over	11	100	11
10 through 99	124	25	31
5 through 9	106	25	26
4	26	12½	3
3	52	12½	7
2	66	12½	8
1	82	12½	11
less than 1	46	12½	4
	513		101

examiners function within a sub-region. Therefore, the sample was chosen so that banks in each of the seven sub-regions were represented. The selected sample also covered banks of different sizes so that it would reflect varied credit experience and differing examination procedures.

Table 1 describes the universe of 513 banks and the basis upon which the sample was taken. The choice of individual banks was made from a list on which the banks were grouped by sub-regions, within which they were ordered alphabetically. For the $10 to $99 million-of-loans group, every fourth bank was included, with the first of the four chosen randomly. The $4 million-and-smaller loan groups were sampled similarly, with every eighth bank in the particular group chosen.

Data for four years, 1963 through 1966, were gathered for each of the sampled banks.[6] Where more than one examination was made within a year, the date comparable to previous examinations was chosen. In some instances, an examination was made in early and late 1965, but not in 1966. In these cases, the early 1965 data were included in the 1965 sample, and the late 1965 data in the 1966 sample.

II. *Substandard Loans—1963 through 1966*

Since the annual amount of substandard loans could vary because of changes in the total of outstanding loans, and since the large banks would dominate the sample if absolute figures were used,[7] substandard loans were stated as percentages of total loans for each bank. (Hereafter, read "substandard loan percentages" to mean "substandard loans per hundred dollars of total loans.")

Table 2 presents the averages and distribution of substandard loans experienced by the sample banks. The range of substandard loans per hundred dollars of total loans is shown to be quite large. In three of the four years, at least a fourth of the banks had no substandard loans. By contrast, the few banks in the upper quartile had substandard loan percentages that were considerably greater than the median amount.

In Part B of Table 2, the data are divided into sub-groups. It can be seen that 1965 was a year of relatively few substandard loans, although the year-to-year differences were not very great. Part C of Table 2 summarizes the results of a previous study. They are similar to those of the present study, despite the difference in years and samples.

Table 3 shows the total loans of the sample banks. There was an increase, over the period, in the mean of total loans, but the medians and quartiles indicate that this increase was the result of growth in the portfolios of the larger banks.

[6] There were several exceptions. One bank was a national bank only in the last three years of the period, another only for the last two years. Data for two of the banks were not available for 1963.

[7] A comparison of the annual means and medians of total loans shows that the upper quartile is much larger than the lower three quartiles and, hence, could heavily weight a total of the sample.

TABLE 2

Substandard Loans per Hundred Dollars of Total Loans

A. Sample of Illinois and Michigan national banks

	1966	1965	1964	1963
High	3.78	9.79	5.84	9.24
Upper quartile	1.20	1.02	1.30	1.27
Median	0.40	0.30	0.44	0.50
Lower quartile	0	0	0	0.04
Low	0	0	0	0
Mean	0.80	0.91	0.89	0.92
Standard deviation	1.21	1.48	1.16	1.27

B. Division of sample into sub-groups

Range of sub-groups	NB *	CT †	NB *	CT †	NB *	CT †	NB *	CT †
0	27	27	32	32	27	27	22	22
over 0 to 0.5	31	58	28	60	25	52	26	48
over 0.5 to 1.0	13	71	15	75	13	65	17	65
over 1.0 to 1.5	11	82	7	82	17	82	13	78
over 1.5 to 2.0	9	91	4	86	5	87	7	85
over 2.0 to 3.0	7	98	6	92	4	91	6	91
over 3.0	3	101	9	101	9	100	6	97

C. Sample of 60 state banks in the New York, Philadelphia, and Atlanta Federal Reserve Districts ‡

Year	Amount	Year	Amount
1957	0.78	1951	0.55
1956	0.90	1950	1.04
1955	1.06	1949	1.63
1954	0.87	1948	1.87
1953	0.93	1947	1.27
1952	0.73		

* Number of banks in sub-group

† Cumulative total of number of banks

‡ Source: Albert M. Wojnilower, **The Quality of Bank Loans,** New York: National Bureau of Economic Research, Occasional Paper 82, 1962, Table 1, p. 8.

TABLE 3

Total Loans of Sample of Illinois and Michigan National Banks (Millions of dollars)

	1966	1965	1964	1963
High	2,864.54	2,661.20	2,223.29	2,099.26
Upper quartile	7.45	8.40	14.96	14.28
Median	6.26	7.30	6.63	5.68
Lower quartile	3.60	3.32	2.62	2.54
Low	.27	.19	.24	.19
Mean	106.2	96.7	81.7	75.1
Standard deviation	411.5	374.4	319.9	295.6

III. *Factors Affecting Substandard Loan Percentages—Description*

The judgment of the examiner in classifying loans is founded primarily on the ability of the borrower to repay. There are, however, other important factors which shall be considered.

First, there is the *loan-mix.* A bank with proportionately heavy unsecured business loans is likely to have a different substandard percentage than one which specializes more in farm or real estate loans. Moreover, since small loans are

TABLE 4

Groups of Substandard Loans per Hundred Dollars of Total Loans
Sample of Illinois and Michigan National Banks
Means (Standard Deviations) of Characteristics of Groups

Range of groups	Number of banks	Per hundred dollars of total loans			Loan types as percentages of total loans				Total loans (millions)	Loans to assets (percent)	Yield on loans (percent)	Yield on assets (percent)	Population of city (thousands)	Number of banks in city
		Substandard loans	Doubtful loans	Loss loans	Unsecured loans	Farm loans	Real estate loans	Installment loans						
1966														
0	27	0(0)	.03(.12)	.03(.06)	12(8)	10(15)	38(17)	23(84)	14(31)	41(12)	5.82(.40)	1.08(.46)	667(1401)	17(33)
over 0 to .5	31	.29(1.13)	.06(.16)	.05(.06)	17(13)	8(14)	37(14)	23(10)	248(705)	48(8)	6.11(.71)	1.15(.39)	703(1334)	16(31)
over .5 to 1.0	13	0(.1)	.06(.09)	.05(.06)	14(9)	4(7.6)	37(15)	30(9)	93(190)	52(10)	6.12(.60)	.94(.35)	432(1040)	10(23)
over 1.0 to 1.5	11	1.24(.13)	.10(.25)	.01(.02)	16(7)	10(12)	38(16)	23(8)	110(261)	45(9)	6.22(.80)	1.15(.23)	483(1133)	10(25)
over 1.5 to 2.0	9	1.78(.16)	.08(.19)	.21(.37)	18(12)	21(20)	28(20)	22(12)	146(345)	41(11)	6.12(.40)	1.17(.59)	403(1180)	11(28)
over 2.0 to 3.0	7	2.25(.22)	.29(.53)	.24(.34)	14(69)	26(16)	27(12)	17(89)	52(24)	50(12)	6.51(.79)	1.37(.32)	7(6)	2(8)
over 3.0	3	5.61(3.64)	.48(.58)	0(0)	26(60)	8.6(.15)	28(8)	24(7)	23(18)	51(8.5)	5.76(.63)	.89(.52)	2409(1976)	60(44)
Coefficient of correlation with substandard loans			.309	.499	1199	.070	—.156	—.088	—.066	—.055	.139	.082	.081	.132
1965														
0	32	0(0)	0(0)	.03(.06)	12(7)	10(15)	36(16)	28(13)	4(29)	39(11)	5.87(.87)	1.13(.52)	570(1303)	15(31)
over 0 to .5	28	.25(.13)	.11(.24)	.08(.11)	19(13)	3(9)	37(17)	22(11)	295(673)	48(86)	5.91(.59)	.98(.37)	1141(1527)	24(36)
over .5 to 1.0	15	.77(.14)	.07(.18)	.13(.28)	13(64)	8(14)	38(14)	27(8)	51(158)	47(11)	6.25(.46)	1.13(.39)	497(1240)	14(24)
over 1.0 to 1.5	7	1.17(.19)	.09(.17)	.10(.08)	14(59)	13(12)	36(10)	23(9)	19(27)	48(6)	6.09(.75)	1.09(.41)	42(52)	3(3)
over 1.5 to 2.0	4	1.80(.14)	.01(.03)	.02(.02)	18(7)	26(13)	19(5)	16(18)	5(5)	39(17)	5.98(.30)	1.37(.34)	8(6)	2(1)
over 2.0 to 3.0	6	2.38(.30)	.03(.08)	.06(.07)	17(5)	17(13)	37(16)	17(9)	9(5)	42(12)	6.00(.21)	1.09(.53)	20(20)	2(1)
over 3.0	9	4.85(1.79)	.09(.19)	.21(.33)	20(14)	23(19)	23(15)	20(10)	7(13)	47(9)	5.77(.66)	1.05(.46)	397(1182)	11(28)
Coefficient of correlation with substandard loans			.103	.361	.136	.367	—.263	—.197	—.087	.144	—.106	.003	.018	—.266
1964														
0	27	0(0)	.06(.33)	.04(.07)	n.a.	n.a.	37(19)	22(12)	13(25)	38(11)	5.74(1.51)	.93(.40)	933(1578)	24(37)
over 0 to .5	25	.24(.14)	.04(.12)	.04(.04)	n.a.	n.a.	40(16)	23(10)	180(447)	45(10)	5.85(.64)	.99(.30)	997(1434)	20(33)
over .5 to 1.0	13	.72(.15)	.03(.06)	.07(.10)	n.a.	n.a.	31(19)	17(9)	220(621)	45(12)	5.83(.53)	.96(.24)	295(979)	8(23)

TABLE 4 (Cont.)

Range of groups	Number of banks	Per hundred dollars of total loans: Substandard loans	Doubtful loans	Loss loans	Loan types as percentages of total loans: Unsecured loans	Farm loans	Real estate loans	Installment loans	Total loans (millions)	Loans to assets (percent)	Yield on loans (percent)	Yield on assets (percent)	Population of city (thousands)	Number of banks in city
over 1.0 to 1.5	17	1.22(.15)	.02(.04)	.04(.06)	n.a.	n.a.	35(16)	21(12)	24(39)	43(10)	5.99(.45)	.88(.49)	444(1170)	12(27)
over 1.5 to 2.0	5	1.81(.08)	0(0)	.10(.11)	n.a.	n.a.	37(11)	21(10)	7(5)	44(11)	6.03(.55)	1.21(.30)	13(11)	2(1)
over 2.0 to 3.0	4	2.30(.23)	.32(.54)	.02(.02)	n.a.	n.a.	19(11)	24(4)	2(1)	40(8)	6.01(1.63)	1.37(.21)	4(4)	2(1)
over 3.0	9	3.89(.84)	0(0)	.08(.08)	n.a.	n.a.	29(21)	25(11)	4(4)	40(12)	5.97(.43)	1.09(.71)	7(8)	1(1)
Coefficient of correlation with sub-standard loans			—.008	.125			—.165	.039	—.098	—.034	.106	.196	.199	—.359
1963														
0	22	0(0)	0(0)	.02(.03)	n.a.	n.a.	32(21)	20(18)	8(9)	n.a.	n.a.	n.a.	660(1395)	17(33)
over 0 to .5	26	.28(.13)	.03(.07)	.05(.07)	n.a.	n.a.	38(20)	21(11)	239(544)	n.a.	n.a.	n.a.	1302(1614)	29(38)
over .5 to 1.0	17	.66(.16)	.05(.13)	.04(.05)	n.a.	n.a.	30(19)	21(12)	49(112)	n.a.	n.a.	n.a.	541(1200)	12(27)
over 1.0 to 1.5	13	1.24(.17)	.04(.09)	.09(.12)	n.a.	n.a.	39(17)	24(10)	5(4)	n.a.	n.a.	n.a.	21(33)	2(2)
over 1.5 to 2.0	7	1.74(.17)	.11(.29)	.07(.14)	n.a.	n.a.	32(15)	21(13)	6(4)	n.a.	n.a.	n.a.	12(7)	2(1)
over 2.0 to 3.0	6	2.51(.28)	.04(.09)	.25(.21)	n.a.	n.a.	21(13)	25(22)	5(5)	n.a.	n.a.	n.a.	17(21)	2(1)
over 3.0	6	4.50(2.33)	.02(.03)	.03(.07)	n.a.	n.a.	17(7)	17(14)	2(3)	n.a.	n.a.	n.a.	6(11)	1(1)
Coefficient of correlation with sub-standard loans			.027	.185			—.216	.001					—.342	—.291

n.a. = No available information

not usually examined individually if a bank maintains good control procedures, banks with larger proportions of installment loans are likely to have smaller substandard percentages.

Second, the *size of total loans* may affect the substandard percentage. Larger banks may have better controls, but smaller banks may know their customers better. Moreover, relatively fewer dollars of loans are examined in larger than in smaller banks.[8]

Third, there may be greater potential *risk* where banks are more heavily loaned. This factor may be revealed in some degree, and in some circumstances, through the yield earned on loans. The average yield on all loans is appropriate for this purpose, because the analysis is concerned with differences among banks rather than among borrowers. The net operating profit (yield) on assets was also included in order to account for differences of costs and profitability among banks, on the expectation that the more profitable banks will take different risks than the less profitable.

Fourth, there are *environmental differences* among banks. Banks in larger cities may serve different types of customers than those in smaller cities. There may also be differences according to whether an area is: principally agricultural, agricultural and industrial, diversified industrial, industrial with a few large companies, or service-college. Where there are more banks, there may be more competition and, perhaps, greater risks taken. Within the sample, Illinois is a unit banking state, and Michigan a limited branch-banking state.

Accordingly, then, the following factors were considered, and their relationships to substandard loan percentages were analyzed:

1. Loan-mix
   a. unsecured loans/total loans, in percentages
   b. farm loans/total loans, in percentages
   c. real estate loans/total loans, in percentages
   d. installment loans/total loans, in percentages
2. Amount of loans, in millions
3. General riskiness
   a. loans/assets, in percentages
   b. yield on loans
   c. yield (net operating profit) on assets
4. Environmental factors
   a. population of city
   b. type of business of area served
   c. number of banks in city
   d. state (Illinois or Michigan)

IV. *Factors Affecting Substandard Loan Percentages—Findings*

Table 4 shows the means and standard deviations of the factors mentioned above, as they relate to the banks, subgrouped according to substandard loan percentages. The means and standard deviations of "doubtful" and "loss" loans per hundred dollars of loans are also given. If interaction among the various factors listed are ignored, the following conclusions may be drawn from this table: [9]

[8] In general, the minimum line-of-credit examined depends on the size of the bank (the larger the bank, the larger the minimum suggested), the amount of indirect loans (which are more heavily audited), and on the examiner's evaluation of the credit administration and/or management of the bank. The *Guidelines* (pp. 2-3) suggests that, for direct loans ". . . all lines of credit shall be worked equal to or exceeding ¾ of 1 percent of gross capital structure" of banks with total assets of less than $25 million, and the lesser of ½ to 1 percent of gross capital structure or $500,000 from banks with more than $25 million of total assets.

[9] It may also be noted that doubtful loans are not consistently or strongly related to substandard loans. However, loss loans are consistently and positively related to substandard loans. The strongest positive relationship is in the group of banks that had the highest percentage of substandard loans.

1. Loan-mix (loan types as percentages of total loans).

   Unsecured and farm loans are positively related, and real estate and installment loans negatively related, to substandard loan percentages. However, the positive relationship of unsecured loans is not as strong as one might expect, and the positive relationship of the farm loans is erratic. Except for the 1964 installment loans, the negative relationships of the real estate and farm loans are consistent and appear to be of similar magnitude among the years.

2. Amount of loans (total loans, in millions).

   The overall relationship of total and substandard loan percentages is strongly negative for all of the years, with the notable exception of the zero substandard loan percentage group. The banks that did not have any substandard loans clearly were smaller banks. However, this finding is somewhat contradicted by Table 5, in which the smaller banks as a group seem to have experienced relatively greater substandard loan percentages. Additional analysis is required, as is discussed below.

3. General riskiness.

   Neither of the variables that purport to measure the general riskiness of a bank's portfolio—loans to assets, and yield on loans—appears to be strongly related to substandard loan percentages. (This conclusion may also be derived from Table 5.) It may be that individual loans that carry higher yields are riskier; the data do not bear on this question directly. But there does not appear to be a pattern of general riskiness for a bank as a whole that is related to the amount of loans classified as substandard.[10] Similarly, the yield on assets is not strongly related to substandard loan percentages.

4. Environmental factors.

   The standard deviations of the population-of-city variables are large, because the cities of Chicago and Detroit are so large relative to other cities in Illinois and Michigan. Thus, it is difficult to conclude much except that the large or small city banks do not dominate any subgroup. There appear to be more banks in the city in which the banks with lower substandard loan percentages are located, except for the sub-groups with the highest percentage of substandard loans.

The relationships between substandard loan percentages and the type of city and state variables could not be shown conveniently on Table 4 and they are, instead, given in Table 5. The greatest contrast among banks serving different types of areas is between those in agricultural and those in mixed agricultural and industrial cities. The agricultural sub-group have relatively high substandard loan percentages (the highest of all groups in all years except one, and above the third quartile in all years except one), while the agricultural-industrial, subgroup have relatively low substandard loan percentages (less than half the agricultural-city percentages in all years except 1966). Banks serving industrial-diversified cities fare somewhat better than those serving industrial cities with

[10] It is interesting to note that the correlation coefficients of doubtful and loss loans per hundred dollars of loans, and the risk factors, are small (the largest is .14, except for the 1966 correlations with loans/assets, where they are .26 and .21) and inconsistent among the years. However, since the risk factors are for a current year, while the doubtful and loss loans might have been made in a previous year, the lag may confound the true relationship.

TABLE 5

Substandard Loans per Hundred Dollars of Total Loans Grouped by Selected Variables
Sample of Illinois and Michigan National Banks
Means, (Standard Deviations), and [Number of Banks]

	1966	1965	1964	1963
Total loans (in millions of dollars)				
Under 5	.80 (.87) [33]	1.30 (2.12) [39]	1.27 (1.48) [41]	1.57 (2.72) [45]
5 to under 10	1.07 (1.90) [27]	.78 (.88) [24]	.77 (.86) [20]	.93 (.91) [20]
10 to under 50	.64 (.96) [26]	.73 (.95) [24]	.59 (.91) [20]	.56 (.65) [19]
50 to under 500	.61 (.54) [10]	.30 (.46) [9]	.50 (.49) [9]	.37 (.22) [11]
500 and over	.58 (.44) [5]	.43 (.29) [5]	.40 (.34) [5]	.31 (.09) [3]
Loans to assets (in percentages)				
Under 40	.66 (.85) [25]	.81 (1.15) [32]	1.00 (1.41) [41]	
40 to under 50	.90 (1.61) [42]	.82 (1.58) [40]	.85 (1.07) [35]	
50 to under 60	.60 (.60) [23]	.96 (1.45) [23]	.69 (.65) [20]	
60 and over	1.18 (1.16) [11]	1.79 (2.56) [6]	1.27 (1.31) [40]	
Average yield on loans (in percentages)				
Under 55	.52 (.82) [19]	1.05 (2.23) [21]	.64 (.97) [25]	1.54 (3.75) [17]*
55 to under 60	.74 (.96) [31]	1.11 (1.55) [32]	.93 (1.11) [32]	1.01 (2.00) [22]
60 to under 65	1.10 (1.81) [30]	.71 (.96) [31]	1.08 (1.15) [28]	1.23 (.99) [20]
65 and over	.72 (.66) [21]	.74 (1.04) [17]	.88 (1.59) [15]	1.04 (1.24) [18]
Type of city				
Service-college	.17 (.23) [4]	.34 (.40) [4]	.33 (.27) [4]	1.84 (1.15) [4]
Agricultural	.91 (.82) [24]	1.81 (2.22) [24]	1.16 (1.50) [24]	1.73 (2.04) [24]
Agr. & Industrial	.67 (.88) [20]	.64 (1.06) [20]	.65 (.86) [19]	.67 (.90) [19]
Industrial—Diversified	.89 (1.58) [46]	.62 (1.11) [46]	.66 (.97) [46]	.84 (2.35) [44]
Few Large Industrial	.56 (.59) [7]	.80 (.97) [7]	1.00 (1.25) [7]	.87 (.70) [7]
State				
Illinois	.86 (1.34) [79]	.92 (1.59) [79]	1.01 (1.25) [79]	1.00 (1.39) [78]
Michigan	.58 (0.59) [22]	.86 (1.09) [22]	.45 (0.58) [21]	.58 (0.66) [20]

*In 1963, 21 banks were omitted due to insufficient data.

a few large industries (except for 1966), and about the same as the agricultural-industrial city banks. There are too few observations in the service-college city sub-group to allow for meaningful conclusions.

It appears that Illinois banks have consistently higher percentages of substandard loans than do Michigan banks, although the standard deviations are high. However, Table 6 shows that Illinois banks have lower total loans than Michigan banks, while total loans are found to be negatively related to substandard loan percentages in Table 4 (although Table 5 shows somewhat different findings).

TABLE 6

Total Loans by State
Sample of Illinois and Michigan National Banks
(Millions of dollars)

	1966	1965	1964	1963
Illinois	86 (427)	81 (387)	70 (336)	64 (310)
Michigan	170 (362)	155 (338)	127 (262)	119 (242)

V. *Multiple Regression Analysis*

Because several variables may be related to the substandard loan percentages in offsetting or complementing ways, the

one-by-one analysis above cannot be considered final. It is also necessary to examine simultaneously the effect of the several variables on substandard loan percentages. Multiple regression analysis is one method of doing this.

Unfortunately, data were not available on all of the above variables for the 1964 and 1963 samples. Therefore, Table 7 shows the analysis for 1966 and 1965 only.[11] Table 6 reveals that total loans are consistently and "significantly" negatively related to the substandard loan percentages. The percentage of unsecured to total loans also is consistently and positively related to substandard loan percentages, although the relationship is not as strong as that exhibited by total loans. Both of these results conform to those expected, and neither are affected by the exclusion of banks with no substandard loans.

The percentage of installment to total loans is consistently and negatively related to substandard loan percentages, except for the 1965 regression, from which banks having no substandard loans were omitted. The negative relationship probably reflects the practice of the examiners of not criticizing specific installment loans. The positive sign of the variable (it is not a printing error) for the "banks with no substandard loans omitted" regression is curious; however, it is not "significant."

The other-type-of-loans variables do not show either consistent or "significant" relationships to the substandard loan percentages. The percentages of farm loans and real estate loans to total loans are negatively related to substandard loan percentages in 1965, and positively related in 1966. This change in sign may reflect a change in, or the weakness of, the underlying relationships. Additional data would be required to resolve this question.

The yield-on-loans and assets variables also have reverse signs in 1965 (negative) and 1966 (positive). Again, the reason for this cannot be determined from the data.

Loans to assets are positively related to substandard loan percentages in both years, as might be expected. The large reduction in the "significance" of the relationship for the "banks with no substandard loans omitted" regression is interesting. Table 4 shows that the banks with no substandard loans have low loan to asset ratios. Inclusion of these observations in the "all banks" regressions resulted in the "significantly" positive coefficient. However, there does not appear to be a meaningful relationship between the loan to asset ratios and the substandard loan percentages of banks that had such loans.

The coefficients of the type-of-city variables show two things. First, banks in service-college cities have lower substandard loan percentages than do banks in the other types of cities. Second, there is little difference in the substandard loan percentages of banks in other types of cities.

It is also interesting to note that the effect of state (Illinois or Michigan), which appeared important in Table 6, is neither consistent nor "significant" in the regression equations.

VI. *Summary and Conclusions*

The study has considered two questions: (1) what have been the changes in the quality of credit in the Seventh National Bank Region; and (2) can substandard loans be predicted by factors related to individual banks?

Before a conclusion could be reached

[11] Population-of-city and number-of-banks-in-city variables were omitted from the regressions, because they are too closely related to the type-of-city-served variables. The type-of-city-served variables were entered as dummy variables, where a variable is "1" for the specific-city type and "0" for all other types. The service-college-city variable was omitted to avoid multicollinearity.

TABLE 7

Substandard Loans per Hundred Dollars of Loans Regressed on All Variables

Regression coefficients (standard errors) and [student's statistic]
Sample of Illinois and Michigan national banks

	All banks	Banks with no substandard loans omitted	All banks	Banks with no substandard loans omitted
Total loans (billions)	—.971 (.415) [2.339]*	—1.204 (.499) [2.414]*	—1.139 (.488) [2.335]*	—1.276 (.581) [2.196]*
Unsecured loans/ total loans, in percentages	.034 (.023) [1.466]	.025 (.033) [.760]	.045 (.022) [2.056]*	.068 (.033) [2.048]*
Farm loans/ total loans, in percentages	—.008 (.022) [.360]	—.016 (.030) [.545]	.039 (.019) [2.004]*	.059 (.026) [2.196]*
Real estate loans/ total loans, in percentages	—.012 (.018) [6.668]	—.024 (.025) [.939]	.002 (.017) [.126]	.015 (.025) [.595]
Installment loans/ total loans, in percentages	—.026 (.022) [1.163]	—.034 (.029) [1.169]	—.018 (.016) [1.135]	.018 (.027) [.642]
Loans/assets, in percentages	.017 (.014) [1.215]	.001 (.019) [.025]	.040 (.015) [2.630]*	.011 (.023) [.493]
Yield on loans, in percentages	.105 (.393) [.260]	.363 (.361) [1.006]	—.084 (.248) [.340]	—.791 (.497) [1.591]
Yield on assets, in percentages	.593 (.263) [2.254]*	.229 (.558) [.411]	—.207 (.376) [.552]	—.219 (.554) [.394]
Agricultural city	.855 (.705) [1.213]	.809 (1.030) [.654]	.988 (.770) [1.283]	.738 (1.113) [.664]
Agricultural and industrial city	.697 (.652) [1.069]	.674 (1.030) [.154]	.948 (.750) [1.264]	.348 (1.154) [.301]
Diversified industrial city	1.014 (.635) [1.596]	1.038 (1.006) [1.032]	.691 (.747) [.925]	.023 (1.232) [.018]

* "Significant" at .05 level

concerning the first question, it was necessary to account for the banking factors that might affect the amounts of substandard loans. These factors were considered, their magnitudes measured, and their relationship to substandard loans

TABLE 7 (Cont'd)

	All banks	Banks with no substandard loans omitted	All banks	Banks with no substandard loans omitted
Few large industries city	.707 (.749) [.944]	.743 (1.177) [.631]	.850 (.861) [.987]	.218 (1.309) [.167]
Illinois=1 Michigan=0	.273 (.371) [.735]	.098 (.476) [.411]	—.203 (.408) [.498]	—.380 (.537) [.707].
Constant	—4.049	—.810	—1.404	3.300
R^2	.198	.183	.302	.392
F ratio	1.66	1.03	2.89*	2.72*
Standard error of estimate	1.084	1.172	1.240	1.272
Number of observations	101	74	101	69

* "Significant" at .05 level

analyzed. Only the total amount of loans at a bank appears to be consistently and "significantly" related to the percentage of substandard loans, although other factors are consistently, but not "significantly," so related. Since total loans did not change greatly during the four-year period studied, it may be concluded that the data shown on Table 2 are affected primarily by changes in the quality of credit—and since the amounts shown are fairly stable, it also appears that credit quality did not change significantly during the period.

The general failure of the bank-related variables used in this study to "explain" the percentages of substandard loans at the banks sampled, indicates that the gross measures used are not adequate. The factors that influence substandard loans may be related to specific borrowers and/or to conditions within banks that are subtler than the variables used here.[12]

In any event, the hypothesis—that factors related to the general riskiness, environment, or loan-mix of individual banks can, in the absence of additional information, explain the percentage of substandard loans listed by examiners—has been tested, and substantially rejected.

[12] The previous study by Albert Wojnilower (cited in Table 2) of the factors related to specific substandard loans reveals that the levels of some balance sheet ratios—current assets to current liabilities, current assets less current liabilities to total assets, and net worth to total liabilities—are systematically lower for criticized than for noncriticized loans, and that there is some relationship between size of borrower and industry group and criticism rates. (*Op cit.*, pp. 18 and 20, Tables 4 and 5.) However, those conclusions are based on a single sample and, therefore, must be considered as tentative. (No mention is made in that study of the interest rates charged on criticized and noncriticized loans.)

► HARRY P. GUENTHER

A Long-Run U.S. Balance-of-Payments Program

In our balance-of-payments policy, we continue to concentrate on the "too large" capital outflow and the "too small" current-account surplus. Thus, the heart of the present program to eliminate the deficit is to control capital outflows through the Interest Equalization Tax and voluntary restraints on direct foreign investment and bank loans to foreigners, coupled with further efforts to expand exports and keep American vacationers in the United States.

The preoccupation with control of private capital flows as a solution to the deficit rests, in the author's view, upon a fundamental error—the belief that our balance-of-payments deficit is a short-run phenomenon. From this premise, it is argued that even if private capital movements are not actually a direct cause of the deficit, they should nevertheless be restricted for the short period required to allow the fundamental forces at work to correct our basic position, after which unfettered private capital movements may be allowed to resume.

First, let us examine the balance-of-payments effects of private capital movements.

I. *Direct Foreign Investment*

U. S. direct foreign investment outflow has grown rapidly since the end of World War II, exceeding $1 billion in each year since 1955. However, as shown in the table, the income, including royalties and fees, has been greater than the new investment in each of the years 1945 through 1966.

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The argument typically advanced against comparisons of this sort, is that the income is from the earnings of past investment and thus should not be related to current outflows. However, the continued growth of repatriated income depends upon a growing earnings base, and thus upon reinvested earnings or direct foreign investment. Even the maintenance of the flow of repatriated income at existing levels may require additional direct investment or reinvested earnings, because of the need to adapt to changing tastes and technology, new products, and shifting competitive forces. Moreover, the curtailment of direct foreign investment, in the face of profitable opportunities abroad, may bring an immediate reduction in income repatriation.

Beyond representing a source of income repatriation, direct foreign investment enterprises also import goods from the U.S. About one-quarter of all U.S. exports in 1963 and 1964 were to, or through, the foreign manufacturing and extractive affiliates of U.S. firms. In each of these years, over $4 billion of exports was to manufacturing affiliates, far in excess of the amounts imported from these affiliates.[1]

TABLE

U.S. Direct Foreign Investment Outflows and Related Receipts, 1945 - 1966

(In millions of dollars)

	Direct foreign investment outflows	Repatriated income	Royalties and fees	Net balance
1945	100	426	NA	326
1946	230	589	NA	359
1947	749	809	NA	60
1948	721	1964	NA	443
1949	660	1112	NA	452
1950	621	1294	126	799
1951	508	1492	130	1114
1952	852	1419	130	697
1953	735	1442	128	835
1954	667	1725	136	1194
1955	823	1912	158	1247
1956	1951	2171	229	449
1957	2442	2249	238	45
1958	1181	2121	245	1185
1959	1372	2228	349	1205
1960	1694	2355	344	1005
1961	1598	2672	448	1522
1962	1557	3050	548	2041
1963	1888	3059	622	1793
1964	2297	3607	700	2010
1965	3371	3961	909	1499
1966*	3363	3978	1051	1666

NA—Not available.

* Fourth quarter 1966 data is preliminary.

Source: U.S. Department of Commerce, **Survey of Current Business,** various issues; and **Balance of Payments Statistical Supplement,** Rev. Ed., Washington: U.S. Government Printing Office.

II. *Other Private Capital Movements*

Portfolio capital outflows also generate return flows of earnings, but unlike income from direct foreign investments, maintenance of the flow of these receipts does not rely directly, if at all, upon continued outflows. However, a portion of the funds raised by foreign security issues in the U.S. is used to pay for U.S. exports, some of which would be lost in the absence of such flotations.[2] Thus, although limitations over portfolio outflows may make some contribution to deficit reduction, anticipations should be tempered with the realization that "too much success" might harm exports.

The interest receipts generated by bank loans do not depend upon a rising volume of total loans outstanding, but

[1] U.S. Department of Commerce, *Survey of Current Business,* Washington: U.S. Government Printing Office, December 1964, 1965. It should be noted that manufacturing affiliates include both firms engaged in manufacturing and those distributing manufactured goods. Obviously, investment would tend, per dollar of exports, to be much heavier in the former while the latter may account for the bulk of the $4 billion-plus in exports.

[2] The total of foreign-security flotations in the U.S. was $1,250 million in 1963, $1,063 million in 1964, $1,206 million in 1965 and a seasonally adjusted $1,105 million during 1966. U.S. Department of Commerce, *Survey of Current Business,* Washington: U.S. Government Printing Office, various issues.

upon the "rolling over" of existing loans. That is, most of these loans being short-term (less than one year), and few of the others exceeding three years, they mature rather quickly, thus halting receipts unless the principal is relent.

Policy since 1964 has been to reduce the growth of bank credit to foreigners—by means of a program of voluntary restraint,[3] and through application of the Interest Equalization Tax to long-term bank loans. The ability to alleviate the balance-of-payments deficit through bank loan reduction depends importantly on the relationship between bank loans and exports. Clearly, the potential target was large, for bank claims on foreigners grew by $2.4 billion ($1.5 billion short-term and $0.9 billion long-term) in 1964.[4] Of the increase in short-term claims, about $400 million was in acceptances.[5] How much of the rest financed trade is not known.

With total claims on foreigners outstanding at year-end 1964 of $12.2 billion, claims under the guidelines could have risen during 1965 by just over $600 million, or by $1.8 billion *less* than the 1964 increase. *Ceteris paribus*, this alone would have reduced the deficit almost to the $0.5 billion-to-$1.0 billion range seen by some as the maximum acceptable under present world-liquidity arrangements. The performance was, indeed, even better. Year-end 1965 total claims were almost unchanged from a year earlier, with short-term claims down by $223 million and long-term higher by $232 million. In 1966, through November (preliminary), total claims actually declined to $11.8 billion.[6]

The question remains whether this reduction in credit (or in its rate of expansion, as required in the guidelines) can take place without decreasing inflows or increasing other outflows. The allowable increases in bank claims on foreigners under the guidelines, in 1965 and 1966, were unusually small, as of course were actual changes, by historical standards. The average annual increase in bank claims on foreigners was 18.7 percent over the 1950-to-1964 period, and in only two of those years, 1953 and 1960, was the increase less than 5 percent (in 1953, total claims on foreigners declined).[7] Both these periods are closely connected with years of disappointing export performance. Even removing from the calculation the unusually large increases in claims on foreigners in the years 1954 and 1961 (the years following the two periods when claims declined or grew by less than 5 percent), the average annual rate of increase was 12.8 percent over the 1950-1964 period.

The preceding calculations obviously do not define the relationship between overall bank credit to foreigners and U.S. exports, but they perhaps suggest that the net effects of the guidelines may differ substantially from the gross impact.

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[3] Bank credits to foreigners were limited to 105 percent of the December 31, 1964-base for 1965, and 109 percent for 1966. For 1967, the ceiling has been held at 109 percent.

[4] U.S. Department of Commerce, *Survey of Current Business*, Washington: U.S. Government Printing Office. The final revisions for claims on foreigners as of December 31, 1964, shown in the *Federal Reserve Bulletin* and the *Treasury Bulletin*, include adjustments for claims previously-held but first reported as of December 31, 1964. Using those revisions would give a 1964-increase in claims on foreigners of $3.1 billion, $1.9 billion short-term and $1.2 billion long-term. The Department of Commerce, however, bases its balance-of-payments data on net credits during the year, excluding adjustments for such claims; thus, the figure $2.4 billion used above. The guidelines, on the other hand, use as a base the total claims outstanding, as adjusted.

[5] *Federal Reserve Bulletin*, Washington: Board of Governors of the Federal Reserve System, January 1967.

[6] *Ibid.*

[7] Computed from data in the *Treasury Bulletin*.

It is useful to look at bank loans and portfolio movements together in examining the possibility that the bank guidelines will result in offsetting outflows. After the Interest Equalization Tax was proposed, but before passage, new foreign security flotations declined sharply, from $899 million in the first half of 1963 to $351 million in the second half of 1963, and $307 million in the first half of 1964. At the same time, bank credits to foreigners rose from $496 million in the first half of 1963 to $1,039 million in the second half of 1963, and $1,271 million in the first half of 1964. The Interest Equalization Tax became law in August 1964. During the second half of 1964, new foreign security issues rose to $652 million, $581 million of it in the fourth quarter, an unadjusted annual rate exceeding the level that brought on the Tax.[8] Meanwhile, bank claims continued to rise, increasing by $1,294 million in the second half of 1964. Realizing the extent to which bank loans could replace or supplement portfolio offerings, the Administration exercised standby authority to apply the Interest Equalization Tax to bank loans with a maturity over one year. Since then, foreign securities newly issued in the U.S. have continued well above the levels of late 1963 and early 1964, though well below the peak level of late 1964.[9]

This experience suggests the extreme difficulty of controlling capital movements. In addition, with interest rates abroad continuing in most instances above U.S. rates, with the limited depth of foreign capital markets, with the bank loophole in the IET closed, and with the exemptions allowed by the Tax, it is questionable how effective the present tax can be. It seems unlikely to make any further net contribution beyond that already achieved, unless growth rates abroad deteriorate; and, with term loans made in 1963 and 1964 reaching maturity, it is highly likely that portfolio offerings may increase. The Administration has, perhaps in anticipation, requested authority to raise IET rates to a level having a two percentage-point impact, double the present rate. Further such pressure may well bring a reversal of recent commercial bank behavior as banks use up the substantial leeway under the guidelines in responding to renewed loan demand abroad.[10] And, even with higher IET rates, many will find it beneficial to borrow here.

What about other private short-term capital movements? These are largely of two types: those in search of higher interest rates, and those inspired by fear of devaluation. If these movements could be stopped, there would be little offsetting loss—these funds are placed in highly liquid, interest earning assets or in demand deposits, neither of which show growth equal to that of equities. The policies designed to keep funds at home, however, themselves increase incentives to place funds abroad—for, by restricting the supply of funds abroad, they raise interest rates. The rise in the Eurodollar rate in the Spring of 1965 was noted as an indication of the success of the balance-of-payments program. It was indeed such an indication, but such increases tempt corporate treasurers and individuals to resume or initiate the holding of balances abroad. In the meantime (that is, until a reaction to the higher rates sets in, if one does), the reduction in liquidity abroad has an adverse effect on U.S. exports.

[8] U.S. Department of Commerce, *Survey of Current Business*, Washington: U.S. Government Printing Office, June and December 1965.

[9] U.S. Department of Commerce, *Survey of Current Business*, Washington: U.S. Government Printing Office, December 1965, 1966.

[10] It was reported in the December 1966, *Federal Reserve Bulletin* that commercial banks had a potential leeway for an outflow of bank credit in excess of $1.2 billion as of October 1, 1966.

Those funds which move out of the U.S. in response to devaluation fears can, of course, be stopped by ending such fears. It is the success or failure of balance-of-payments policies in reversing other flows which will determine the behavior of these speculative movements.

During 1966, there was a sharp rise in short-term capital inflows in response to the tight money situation in the U.S. Short-term liabilities to foreigners reported by U.S. banks rose by over $3 billion during the first 11 months of 1966.[11] We now face the prospect of an outflow of like magnitude, especially if U.S. interest rates fall faster than those abroad. Weakness in Eurodollar rates in early 1967 was interpreted by some as an indication that this reversal was under way.

III. *The Fundamental Forces*

What are the fundamental forces which may be expected to alleviate our balance-of-payments problem? Presumably, these involve one, or a combination, of three factors:[12] (1) a substantial improvement in our current-account surplus; (2) a reversal of forces causing capital outflows; (3) an end to the need for, or a sharp diminution in, U.S. Government foreign-assistance programs and overseas military expenditures.

Achievement of a substantially expanded current-account surplus in the face of a growing services deficit (largely due to tourism) does not appear likely in the near future. In addition to the factors mentioned earlier, conditions abroad limit U.S. ability to gain a net expansion of exports. Regional trading blocs discriminate by their very nature against nonmembers. Particularly sensitive are our agricultural exports to the Common Market. There are indications that our exports to Latin American countries are meeting stiffer barriers as those countries seek to improve their own payments balances. There is also some fear that the Europeans may satisfy Latin American requests for longer credit terms than are conventionally granted by U.S. firms, thus winning part of our existing export market. Many nations are in no position to expand net imports from the U.S., particularly the underdeveloped countries which are short of reserves. Weather, which contributed to our agricultural exports in 1964, did not do so for 1965 and 1966, and cannot be counted on in the future. The U.S. is no longer the sole source of supply for most desired goods, and is no longer alone in advanced technology. It has become increasingly important to compete more effectively through market proximity, which means more direct foreign investment, precisely the area of current efforts at control.

The conditions for reversing private capital flows do not appear imminent. Interest rates abroad continue, for the most part, substantially above U.S. rates, foreign capital markets lack the capacity of New York, and government restrictions and priorities prevent most national capital markets abroad from becoming truly international despite reports that progress is being made. Although cyclical factors may periodically reverse private capital flows (as occurred in 1966), any fundamental change would require a generally superior economic growth rate in the U.S. compared with elsewhere (commensurate with the risk), coupled with a substantially lower level of average

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[11] *Federal Reserve Bulletin*, Washington: Board of Governors of the Federal Reserve System, January 1967.

[12] There is a fourth possibility, namely, that there will be an overhaul of the international monetary mechanism in the near future. The expectation of a near-term revision appears overly optimistic, and any suggestion that this would make deficit elimination unnecessary is invalid. For a thorough review of the alternative proposals for revision and related matters, see Alvin H. Hansen, *The Dollar and the International Monetary System*, New York: McGraw Hill, 1965.

interest rates abroad or the development of European capital markets into an effective alternative to New York. There would still remain, of course, the possibility of adverse effects on the U.S. current-account balance, of shifting relative rates of economic growth. Experience in 1966 suggests that the outcome of such conditions will not be balance-of-payments relief.

Current policies seem unlikely to reduce U.S. foreign assistance and overseas military expenditures, especially with continued heavy costs of the Vietnamese conflict.

IV. *Conclusions*

Direct foreign investment has not created our deficit, and is a key factor in U.S. exports. Control of other private capital movements, while reducing the deficit, seems unlikely to eliminate it, especially in view of the repercussions on exports of "too much success" in controlling capital outflows. Moreover, the absence of other factors at work to produce a surplus would necessitate making the controls permanent and thus, presumably, mandatory.

Superior alternatives do exist. One would be to work for the internationalization of European capital markets. This, of course, cannot be done unilaterally, nor can it be done quickly, but it could be made a clearly defined part of our program of international economic development. Likewise, we could endeavor to achieve greater economic and military assistance burden sharing. This would require greater willingness on the part of the dollar-surplus countries to utilize these resources for foreign aid rather than conversion to gold—also a course which can be carried out neither unilaterally nor, it seems likely, quickly.

Fully within our power to control and quickly alter, are our own foreign assistance programs and military expenditures abroad. Foreign aid could be converted to a lend lease basis with credits only in goods, not money. This would avoid the problems of leakage. Although, if as claimed, procurement may be at least 80 percent tied, the remainder amounts to $820 million out of the $4.1 billion of net grants and credits repayable in dollars recorded during 1966.[13] Furthermore, this does not take into account the possibility of substitution—that is, the use of American aid to purchase imports that would have come from the United States in any event. Some have argued that, since underdeveloped countries are short of hard currencies but long on desire for U.S. goods, they would tend to spend all additional available dollars in the United States. This implies that the U.S. is the lowest cost source of supply of the vast majority of needs, and that any substitution leakage goes to nations which, in response, buy more U.S. goods, not to surplus nations which convert dollars into gold. Logic might suggest some "normal" propensity to import from the U.S., rather than a one-to-one relationship between aid and exports. Indeed, we find that, in 1964, there were 50 countries which received in net nonmilitary assistance from the U.S. an amount exceeding their trade deficit with the U.S. (or who received such assistance while running a trade surplus).[14] Although it would be useful to include the services-import component, such detail is not available by country; furthermore, since imports are on a CIF-basis, a considerable service element, most of which goes to non-Americans, is already included. It may also be argued that, since foreign exchange reserves should be considered as

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[13] U.S. Department of Commerce, *Survey of Current Business*, Washington: U.S. Government Printing Office, March 1967.

[14] *Direction of Trade*, Washington: IMF and IBRD, various issues: National Advisory Council on International Monetary and Financial Problems, *Semiannual Report* for the period January 1-June 30, 1965, Washington: U.S. Government Printing Office, 1966.

a pool, the capital account needs to be included. It must be borne in mind, however, that most direct foreign investments are probable net suppliers of foreign exchange in developing countries, through exports and capital inflows in excess of repatriations of income.

Military expenditures abroad justifiably remain inviolate where they occur in response to military need. Where our military expenditures are more political in origin, as some believe they are in Western Europe, the scope for reduction is greater. Our Western European military expenditures have ranged from about $1.3 billion to $1.9 billion over the past 12 years. In 1965, the $1.3 billion of these expenditures was, in part, offset by $475 million of military sales, leaving a deficit of about $825 million.[15]

Finally, our capital contributions to international financial institutions, their procurement policies, and the flotation of their debt securities have added to our balance-of-payments deficits. Our share of capital contributions could either be reduced to coincide with our external position, or tailored to the procurement policies of these institutions and the external positions of members. Bond flotations in the U.S. by these institutions could be curbed until we are in an equilibrium or surplus position.

An approach such as we have outlined would represent an effort to eliminate our deficit by dealing with the long-term factors involved. It would not entail interference with the free movement of the factors of production, and would encourage worldwide participation in economic development of the underdeveloped world. The alternative seems to be permanent capital controls imposed on a mandatory basis.

[15] U.S. Department of Commerce, *Survey of Current Business*, Washington: U.S. Government Printing Office, September 1966.

A Skeptical View of the "Band" Proposal

Under the so-called band system, exchange rates would be allowed to fluctuate some 2 to 5 percent on either side of parity, and perhaps more, instead of within 1 percent or less of parity, as at present.[1] This article examines the band proposal and similar compromises between fixed and free exchange rates and questions the tactic of recommending such a compromise as a supposed transitional stage on the way to free rates.

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I. *Adjustment and Discipline*

A widened band would supposedly

[1] George N. Halm sympathetically surveys various proposals of this sort in *The "Band" Proposal: The Limits of Permissible Exchange Rate Variations*, Special Papers in International Economics, No. 6; Princeton: International Finance Section, Princeton University, 1965. In William Fellner and others, *Maintaining and Restoring Balance in International Payments*, Princeton: Princeton University Press, 1966, pp. 111-122, Fellner quotes and comments favorably on a statement by 27 economists advocating the band and crawling-peg proposals. (For a definition of the crawling peg, see Section V of this paper.) Several signers of the statement are known to favor truly free exchange rates and so must have been going along with what they considered as politically expedient, though not economically ideal, compromises.

If each currency, other than a common denominator, were allowed to appreciate or depreciate as much as x percent from its parity defined in gold or a common-denominator currency, its total range of permissible fluctuation would be $2x$ percent. The maximum range of fluctuation in the rate between two ordinary currencies would be approximately $4x$ percent. At one extreme of the range, one currency would be as strong, and the other as weak, against the common denominator as permitted; at the other extreme, these positions would be reversed.

give exchange rates more scope to correct "fundamental disequilibriums" in balances of payments than they have under the present system of (infrequently) adjustable pegs. This greater automaticity would help avoid the large gains and losses of official gold and foreign-exchange reserves that sometimes advertise the wrong levels of today's nearly rigid rates. Requiring less official intervention and thus smaller reserves, the new system might even help solve the problem of an actual or impending shortage of international liquidity. This result partly depends, however, on the character of speculation under the new system, a question we shall consider.

Support limits under the band proposal, defined in relation to declared exchange-rate parities, would preserve some of the supposed anti-inflationary "discipline" of fixed rates. These limits would also, it is said, "provide guidelines for the harmonization of national economic policies." [2] On the other hand, if harmonization required each country to keep in step with inflation or depression abroad, compartmentalization of mistakes under truly free exchange rates might be preferable. The band system would go only part way toward removing a bias of the present system running more towards imported inflation than imported deflation.

Related to the "discipline" claim is the claim that fluctuations within a broadened band would provide a more sensitive and straightforward indicator of the growing strength or weakness of a currency, and of a country's payments position, than would gains or losses of reserves under the present system. Exchange-rate movements, some argue, would signal the need for a change in monetary-fiscal policies.[3] This advantage, if genuine, is no more characteristic of the band system, however, than of truly free exchange rates.

The band system would breed ambiguity about the purpose of the balance-of-payments equilibrating mechanism—whether it was designed for exchange-rate flexibility or for externally disciplined domestic financial policies. This ambiguity could delay action to correct a deficit, making its correction all the more difficult in the end, and possibly necessitating a devaluation (a change in the parity and support limits) and loss of the supposed advantages of the band system.[4] In contrast with the band and the adjustable peg alike, both truly fixed and truly free rates avoid this awkward ambiguity. The fixed system squarely orients domestic monetary-fiscal policy to the requirements of external balance; the free system orients it to domestic considerations and relies upon exchange-rate fluctuations to ensure external balance.

II. *Forward-Rate Policy*

The band system—to return to arguments for it—would increase the scope for official forward-exchange-rate policy. It is a familiar recommendation nowadays that the authorities should support the forward quotation of the home currency when speculation would otherwise push it to a discount and motivate an outflow of arbitrage funds. Forward support would take pressure off the spot quotation and the official reserves. Vigorous enough forward support could even prevent an interest-motivated outflow of funds by, in effect, making the home country's interest rate higher from the international than from the domestic point of view. As is well known, however, a forward exchange rate cannot be held outside the support limits of the spot rate if these limits command firm confidence,

[2] Halm, *op. cit.*, p. 50.
[3] *Ibid.*, p. 54.
[4] Francis Cassell, *Gold or Credit?*, New York and London: Praeger, 1965, pp. 183-184.

as they would, practically by definition, if foreign-exchange policy were successful. Maintaining confidence in a *narrow* spot band is incompatible with using the weapon of a substantial forward premium on the home currency. A wide band, on the other hand, would permit holding the home currency at a substantial forward premium when desirable (except, of course, when the home currency was already near its maximum spot strength, which would be unlikely when the currency was in need of defense).

This particular argument for a widened band recognizes one difficulty of tight spot-rate pegging. The band compromise scores a point over the present system—if forward support is in fact a sound idea. It does not necessarily score over completely free rates, under which intervention in the forward market, as in the spot market, would be inappropriate anyway.

III. *The Band and Speculation*

A further advantage claimed for the band system is that it would lessen the problem of one-way option speculation. Nowadays, with rates nearly rigid, speculators will win on an expected change in parity and will nearly breakeven if the change is avoided. But speculators would have to reckon with the possibility of sizable losses if the parity were successfully defended and if the exchange rate rebounded from one edge towards the other of a *widened* band. Stabilizing speculation within the band would have larger scope than at present. Confidence in the band would make a rate approaching one edge seem far more likely to bounce back than break through; and speculators, expecting the rebound, would help cause it. Such expectations would even resist a close approach to the edge in the first place. Nowadays, in contrast, the profit from correct stabilizing speculation on a rebound from one to the other of the close support limits is slight compared with the profit from correct destabilizing speculation on an adjustment in parity.

If stabilizing speculation did help defend widened support limits on either side of parity, the volume of official intervention could be smaller than at present. For this reason, as well as because of any "fundamental" balance-of-payments correction through the exchange rate, official reserves could safely be smaller than under the present system. With speculation *de*stabilizing and balance-of-payments items insensitive to small price changes in the short run, the need for international liquidity could even be larger.[5] Rapid depreciation of a currency within its band could shake confidence and develop into a self-aggravating movement. (Although this argument is commonly used against free exchange rates also, the two systems have important differences in this respect, as will be explained.) Even under the existing system of close support limits, rate movements tend to shake confidence unless the authorities closely restrain them: ". . . experience has shown that a wider range [of fluctuation] increases speculation."[6] If confidence prevailed at first and then lapsed, a shift in direction of previously stabilizing speculation would be all the more troublesome the heavier it had been. A troublesome shift could even occur without an initial loss of confidence. If the original conditions depressing a currency toward the lower edge of its band did not reverse themselves as soon as speculators had hoped, they might

[5] Sir Roy Harrod stresses this point in *Reforming the World's Money*, London: Macmillan; New York: St. Martin's Press, 1965, Chapter 2. Harrod is discussing not the band proposal in particular, but (managed) exchange-rate flexibility in general.

[6] Milton Gilbert in National Industrial Conference Board Convocation, October 1965, *Gold and World Monetary Problems*, New York: Macmillan, 1966, pp. 125-126.

become disappointed and withdraw their funds. They might have had their funds available for speculation only temporarily in the first place and might have planned to withdraw them soon, with or without the expected profit. In such a situation, the authorities could hardly hope to restore confidence by engineering a slight appreciation of the currency; that would only offer speculators a chance to get out with at least part of the profit they had sought.[7]

In this and other respects, problems of speculation are likely to be worse under the band system than under truly free exchange rates. Unless countries coordinate their monetary and fiscal policies closely, the levels at which exchange rates would be in equilibrium are likely to change over time. Changes in monetary-fiscal policies or market conditions at home or abroad would not be the only possible developments making a currency's band inappropriate; changes in the parities of one or more foreign currencies could be responsible.[8] With the actual exchange rate sticking at one edge or the other of an outmoded band, the system would have lost its supposed advantages. Exchange-rate flexibility would no longer be helping to maintain balance-of-payments equilibrium. The restraint on one-way-option speculation would be weak. The very width of the band would advertise the disequilibrium level of the parity and tend to incite speculation on a possible adjustment. As under the adjustable-peg, rumors can be disruptive even when the rumored adjustments will in fact be avoided.

Even when one-way-option speculation has so far been absent, the situation can be precarious. Bullishness may be matching bearishness on a weak currency only because of expectations that its lower support limit will hold firm and that any change in the rate will be upward. Such expectations depend on policy and are subject to change, upsetting the standoff between bullishness and bearishness. Under truly free exchange rates, by contrast, expectations hinge neither on defense of a support limit nor on any other aspect of policy, for the foreign-exchange policy is simply "hands off." A truly free rate is *already* at the level where the combinations of speculators' and arbitrageurs' sentiments on the two sides of the market match fairly evenly. Developments affecting the foreign-exchange market are spread out over time; policy decisions do not bunch them together in the awareness of the public.

Official intervention provides more material for expectations to feed on and change sharply about than do unmanipulated market conditions alone. Under the band system, diagnosis and expectations could center on the approach of an exchange rate to either limit of its band, on actual or prospective changes in official reserves, on the probability of successful defense of the band's edge, and/or on the prospective reactions of speculators themselves to official as well as private trading on the market. In comparison with free rates, the band system provides more crisis points and more activities about which speculators' interpretations could suddenly change.

IV. *Further Doubts*

Exchange-rate risk, as an impediment to trade and investment, would presumably not be much different under the band system than under free rates. A wide band would allow about as much fluctuation as would be likely to occur in a free rate over a few months, and no reason suggests itself for expecting forward-exchange facilities to perform better under the band system. Any slight differ-

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[7] Cf. William H. White, *Some Aspects of the Problem of Flexible Exchanges,* unpublished doctoral thesis, Harvard University, June 1954, pp. 81-83.

[8] *Ibid.,* p. 84.

ence would even seem adverse to the band system, since the one-way character of expectations at spot support limits, as well as possibilities and fears of interventions and controls, could interfere with the way that interest arbitrage normally maintains a systematic close relation between forward and spot rates of exchange.

Let us summarize. When a free exchange rate would fluctuate no more widely than the edges of a band, support limits would be unnecessary. On the other hand, when a free rate would be outside the band and the actual rate would be bumping along one edge, the very width of the band would emphasize how wrong the parity was. The system would then have the disadvantages of tightly pegged rates, including that of possibly inciting one-way-option speculation. The band system multiplies the material for speculative attitudes to focus on and change about.

V. *Variants of the Band Proposal*

The authorities might intervene solely to defend the two edges of the band, leaving the exchange rate entirely free between them. Alternatively, they might intervene even within the band to iron out short-run wobbles, thus combining the ideas of an exchange-stabilization fund and the band pure and simple. Unfortunately, a wide band would give scope to the itch to intervene. Different countries' authorities might intervene at cross purposes. (In contrast, the more closely countries peg their currencies, the less scope they have for trying to move rates in opposite directions.)

These two ideas might be combined with a third, that of the adjustable peg, yielding a scheme of managed flexibility within a movable band—in other words, within a range on either side of a parity subject to occasional deliberate adjustment.

The rather distinctive proposal for a "crawling peg" deserves some attention here because several of the comments applicable to the various band proposals apply to it as well. The exchange rate would be pegged within quite narrow limits, as at present, but its parity, and the two limits closely flanking it, would be subject to frequent, slight change. They might be deliberately adjusted as often as once a month or once a week to correct persistent balance-of-payments disequilibrium, but only by amounts each time that would be slight even in relation to the narrow range of permissible fluctuation. Alternatively, the parity might change every day, being set at a moving average of the actual exchange rate over a specified number of preceding days (perhaps one year).[9] If the rate on a definitely overvalued currency were persistently bumping along the lower edge of its narrow band, that very behavior would gradually pull down the moving average and the support limits until the currency had eventually depreciated to a new equilibrium level. Details of proposed schemes would allow a currency under persistent upward or downward pressure to appreciate or depreciate against the common-denominator currency by some 2 or 3 percent a year, at most. The maximum change in the parity rate between one currency under persistent upward pressure and another under persistent downward pressure would amount to about twice as much, or about 4 to 6 percent a year.

This pace of crawl would supposedly be adequate to allow for divergences between rates of inflation of the degree experienced in major countries since World

[9] These two alternatives are proposed in, respectively, John H. Williamson, *The Crawling Peg*, Essays in International Finance, No. 50; Princeton: International Finance Section, Princeton University, December 1965; and J. Carter Murphy, "Moderated Exchange Rate Variability," *The National Banking Review*, 3, December 1965, pp. 151-161.

War II. With a currency's peg crawling toward eventual correction of a fundamental balance-of-payments disequilibrium, assurances against a drastic and possibly excessive devaluation would be more credible than when the keeping of such promises depended on the problematic success of an incomes policy or even of deflation. Official reserves would seem more surely adequate to hold exchange-rate movements to a crawl than to prevent them entirely, so confidence in their adequacy would prevent massive speculation. The logic of the scheme, particularly in preserving confidence, precludes any loophole permitting large rate adjustments. By providing a long-run equilibrating mechanism and eliminating the problem of one-way-option speculation,[10] the scheme would lessen the amount of growth needed in international liquidity.

Precisely because exchange-rate adjustment would be gradual even in cases of unmistakable fundamental disequilibrium, however, situations could arise in which an observed crawl in an exchange rate could reasonably be expected to persist for some time. Incentives would result akin to those of a deduction from interest rates in a weak-currency country or a supplement to interest rates in a strong-currency country. To keep such incentives from causing troublesome capital movements, interest rates would have to be higher enough than otherwise in a weak-currency country and lower enough in a strong-currency country.[11] This additional constraint on, and complication for, domestic monetary-fiscal policy must count rather heavily against the scheme, especially when policy has a hard enough job, anyway, trying to reconcile domestic goals of full employment, price-level stability, growth, and perhaps other objectives.

As under other schemes of managed or limited exchange-rate flexibility, complications are also likely to beset interest arbitrage and impair the smooth operation of the forward-exchange market as a means of shedding exchange-rate risk.[12]

All the proposals reviewed above are alike in being manifestations of a search for a new compromise, better than the existing Bretton Woods compromise, between the extremes of "permanently" fixed and completely free exchange rates. At least some of them leave scope for private speculation hinging on anticipations about the objectives, character, and intensity of official intervention. By requiring intervention, the compromise schemes leave unsolved the whole problem of the amount and nature of international liquidity to be held by, or available to, national monetary authorities. There is a vast difference between abolishing the liquidity problem, as free ex-

[10] Murphy, *op. cit.*, p. 157, recognizes that speculators operating bearishly on one currency and bullishly on another, neither of which was the common-denominator currency, might hope for profits as large as 12 percent a year, assuming that each currency could fluctuate as far as 1½ percent on either side of its parity in terms of a common-denominator currency or gold, and also assuming that its parity was calculated as the moving average of the rate on the 307 previous days. Speculators would need extreme good luck to reap that maximum gain, however, and they would risk considerable losses.

[11] Some advocates of the crawling peg recognize this necessity but judge it not a decisive objection. See Williamson, *op. cit.*, pp. 18-19. For a more pessimistic view of the consequences of discounting the expected continuation of exchange-rate trends, see Robert V. Roosa in Roosa and Fred Hirsch, *Reserves, Reserve Currencies, and Vehicle Currencies: An Argument*, Essays in International Finance, No. 54; Princeton: International Finance Section, Princeton University, May 1966, p. 36.

[12] For statement and rejection of an objection involving the forward-exchange market, see Henry N. Goldstein, "Moderated Exchange Rate Variability: A Comment," pp. 97-100, and J. Carter Murphy, "Moderated Exchange Rate Variability: Reply," pp. 101-105, both in *The National Banking Review*, 4, September 1966.

change rates would do, and merely alleviating it. Sir Roy Harrod may even be right in worrying that flexible exchange rates —by which he means *managed* flexibility —will require more international liquidity than the existing system does. One of his worries concerns completely free rates as well—the danger from lack of discipline and the interaction among inflation, exchange depreciation, and speculation—but other worries involving speculation apply to managed flexibility only. Heavier intervention and larger reserves could also be necessary because the authorities of different countries were bucking each others' opposite interventions.

VI. *Unwise Tactics*

Some observers propose the band, or some such scheme of limited or managed flexibility, not because they really prefer it to completely free flexibility but because they view it as a compromise suitable for a gradual approach to complete freedom. They liken the support limits that define a band to the training wheels on a child's bicycle.[13]

This view concerns political tactics, not economics. It is likely to boomerang. The band proposal testifies to the belief that parities, support limits, and interventions are necessary—that a completely-free rate would be unsafe. Yet it confesses the impracticality of defending parities closely without costly disadvantages. The system of completely free rates escapes this internal contradiction.

Far from supporting an eventual move to free flexibility, experience with compromise systems is likely to be misinterpreted as evidence against any flexibility at all. Much comment on the exchange-rate flexibility of the 1930's and the Canadian experiment that ended in 1962 illustrates the danger that the troubles experienced with managed flexibility will be anticipated also for free flexibility.[14] A compromise system is likely to perform poorly because it combines the worst, not the best, features of fixed and free rates, and lacks the self-consistency of either. It gives scope to the official itch to intervene in the market and to occasional interventions at cross purposes, and it is vulnerable to destabilizing speculation hinging on rumors and hunches about the directions and character of official intervention.

When some economists recommend the policies they really expect to work best while others recommend compromises based on their amateur assessments of political acceptability, they create a spurious impression of disagreement among themselves and undermine the authority of their technical knowledge. Unsatisfactory and misinterpreted experience with some compromise system, far from gradually educating people in favor of free exchange rates, is likely to make free rates even more politically impossible than they are now.

[13] Cf. Halm, *op. cit.*, pp. 19-20, 55.

[14] The Canadian experiment with flexible exchange rates is often said to have failed, necessitating the return to a fixed parity in May 1962. What is so commonly forgotten is that the disorders that helped motivate the return to a fixed parity occurred *after* mid-June 1961, when managed flexibility replaced substantially free flexibility. The crucial distinction between Canadian exchange-rate policy and domestic monetary policy is also often missed.

►WILLIAM L. SILBER

Open Market Rates and Regulation Q

Regulation Q, which sets the maximum rates member banks are permitted to pay on time and savings deposits, clearly affects the competitive position of banks *vis-a-vis* other financial intermediaries. When open market rates rise, the rates offered by nonbank intermediaries tend to increase. If the competitive position of banks in the savings market is to be sustained, the permissible rates under Regulation Q must then be increased. The impact of rate increases under Regulation Q on open market rates has not been given much attention. This paper is addressed to that problem.

It is tempting to analyze an increase in the maximum time-deposit rate (MTDR), and the resulting increase in rates on commercial-bank time deposits, as a straightforward extension of the theory of the firm. An increase in the cost of inputs will result in an increase in the price of output; similarly, since banks now pay higher rates for their sources of funds (inputs), they will also demand increased rates on their uses of funds. Therefore, an increase in permissible rates under Regulation Q would increase the time-deposit rate and the rates on open-market securities. Although this result (open-market rates increasing) has been the initial intuitive reaction of a number of economists to whom this question was posed, it shall be demonstrated that it is, in fact, not the most likely result.

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I. Regulation Q and the Time-Deposit Rate

Although we assumed that an increase

in the MTDR would cause banks to raise the rate offered on time deposits, it is important to recognize explicitly the conditions under which this will occur. If commercial banks are already in equilibrium, with the marginal revenue (*mr*) earned on assets equal to the marginal cost (*mc*) of attracting deposits, then an increase in the MTDR will have no effect on the system. Only if *mr* is greater than *mc* will an increase in the MTDR induce banks to raise the rate they offer on time deposits. James Tobin points out that, given the institutional conditions in the United States, it is almost certain that the banking system is in the position where the marginal yield on assets is greater than the marginal cost of attracting deposits.[1] Therefore, we can assume that a permissible rate increase under Regulation Q will induce banks to raise their time-deposit rate. It is important to recognize that this increase in the "cost of their inputs" is not imposed upon the initiating bank (banking system) by the market. Rather, it is a profit-maximizing decision to reduce the initial disequilibrium position of the bank (banking system).

II. Impact on Open-Market Rates

In order to determine the impact of an increased time-deposit rate on open-market rates, we must examine the effect of this variable on the demand for money and the demand for bonds. J. G. Gurley and E. Shaw have analyzed this problem in outline form.[2] They point out a number of feasible behavioral patterns.

The increase in the time-deposit rate will induce the public to reduce its demand for other financial assets and increase its demand for time deposits. If the public reduces its demand for demand deposits and maintains its demand for primary securities, while at the same time banks use the increased time deposits to make loans or purchase additional securities, then the rate of interest on primary securities will fall. This follows so long as the supply of money (demand deposits plus currency) remains constant—that is, a fall in the demand for money, given the supply of money, reduces the open-market rate. The supply of demand deposits plus currency will not be reduced unless banks are induced to sell some of their assets as yields fall. Tobin quite correctly points out that so long as *mr* is greater than *mc*, banks will not be induced to reduce the size of their portfolios.[3] Note that this part of our analysis assumes that there is no reserve requirement on time deposits. We shall relax this assumption, shortly.

On the other hand, if the public wants only to give up primary securities when it increases its demand for time deposits, while banks want to hold cash, the yield on primary securities will rise. These two extreme cases are cited by Gurley and Shaw.[4] We must now determine the assumptions which are the best approximation to the real world.

It is quite reasonable to assume that a financial intermediary does not hold idle cash balances after it has raised its deposit rate to attract these funds. Intermediaries return the demand deposits to the public by buying securities or making loans. Hence, the volume of demand deposits held by the public should remain unchanged. Therefore, what happens to open-market rates seems to depend upon the public's preferences with

[1] Tobin bases the existence of this disequilibrium position on the fact that required reserves and the zero deposit rate on demand deposits cut off bank investments before *mr* equals *mc*. See James Tobin, "Commercial Banks as Creators of Money," in *Banking and Monetary Studies*, Deane Carson (ed.), Homewood, Ill., Irwin Co.

[2] See J. G. Gurley and E. Shaw, *Money in a Theory of Finance*, The Brookings Institution, Washington, D.C., 1960, pp. 214-218.

[3] Tobin, *op. cit.*

[4] Gurley and Shaw, *op. cit.*

regard to the substitutability between demand deposits, time deposits and primary securities. The most reasonable assumption is that the household and corporate sectors want to give up both demand deposits and primary securities when they increase their holdings of time deposits (these financial assets are substitutes for each other).

The impact on primary-security rates can be determined either through the money market or the bond market. For example, since demand-deposit supply is fixed while demand for demand deposits falls, the equilibrium open-market rate must fall. Similarly, since the banking system's demand for primary securities increases by the entire amount of the increase in time deposits, while the public's demand for securities falls by only a fraction thereof, there is a net increase in demand for primary securities—hence, their yields will fall.

It is instructive to note that even if the public wants only to give up primary securities when it increases its holdings of time deposits, there nevertheless will be a fall in yields on primary securities so long as the banking system uses the entire increase in time deposits to buy primary securities. Through economies of scale and pooling of independent risks, financial intermediaries can offer lower interest rates to prospective borrowers than can the household sector. Competition among individual banks will lead to higher prices for primary securities—hence, reduced yields. This can also be shown by looking at the public's demand for money. Although we have assumed in this case that demand deposits and time deposits are not substitutes, there has been a decrease in the *need* for liquidity by the household sector, since it now holds more liquid time deposits instead of primary securities. The demand for money, therefore, falls, and with a given supply, the equilibrium interest rate also falls.

The one complication that arises in this analysis stems from the reserve requirement on time deposits. If the public is induced to shift $100 in demand deposits into time deposits, the banking system will have only $16 in excess reserves, given a reserve requirement of 20 percent on demand deposits and 4 percent on time deposits. This $16 of excess reserves can be used to support an additional $80 of demand deposits. (When required reserves on time deposits were ignored, there was an increase in excess reserves equal to $20, that is, one-fifth of $100). Hence, as a result of the shift from demand deposits to time deposits, there was a net increase in demand for primary securities by the banking system equal to $80 (instead of the $100 which we implicitly assumed in the original case when the time-deposit reserve requirement was not taken into account).

The effect on our mechanism of required reserves on time deposits can also be explained using T-accounts:

I

Bank A

$RR_{dd}-20$	DD−100
$RR_{td}+4$	TD+100
ER=+16	

II

Bank A

PS+16	DD+16

In Account I, we record Bank A as losing $100 in demand deposits (DD) and gaining $100 in time deposits (TD). With required reserves on DD (RR_{dd}) at 20 percent and required reserves on TD (RR_{td}) at 4 percent, this implies that excess reserves (ER) at Bank A increase by $16. We assume that the bank wants to hold zero excess reserves, so in Account II we record an increase in pri-

mary-security holdings (PS) of $16 and a credit to DD of an additional $16. Given RR_{dd} of 20 percent, there will be a multiple-deposit creation (as the ER ripple through the banking system) of $16 times 5, or $80. Therefore, the net result of the entire operation is:

(1) $\Delta TD = +100$

(2) $\Delta DD = -100 + 80 = -20.$

Therefore, bank assets change by plus 100 minus 20; or, bank demand for primary securities rises by $80.

This qualification implies that, in our examples, in order for there to be a *decrease* in rates on primary securities, the public must want to give up at least $20 in demand deposits when it increases its demand for time deposits by $100. This will insure that the increase in bank demand for primary securities will not be more than offset by a fall in household demand. It seems likely that this requirement will be met, since demand deposits are probably better substitutes for time deposits in the public's portfolio than are primary securities. [5]

The analysis is altered only slightly if the existence of claims on other financial intermediaries is explicitly introduced. In particular, the increase in the time-deposit rate is likely, *ceteris paribus*, to reduce the demand for savings and loan shares or mutual savings bank deposits, as well as reduce the demand for demand deposits and primary securities. This effect, however, is the same as the fall in the public's demand for primary securities. In the limiting case, if time deposits were substitutes only for the liabilities of other financial intermediaries [6]—that is, if the demand for demand deposits does not fall when the time-deposit rate increases—then open-market rates would increase when permissible rates under Regulation Q were increased. This result follows from the fact that the switch from nonbank liabilities to time deposits causes a loss in reserves (same as above)—hence, the supply of demand deposits will fall (the demand for primary securities falls) and interest rates will rise.

In the general case, however, the conditions which resulted in a negative effect on open market rates of a permissible increase under Regulation Q are still valid. So long as the demand for demand deposits falls sufficiently to offset the falling supply (of DD) induced by the increased required reserves on time deposits, there will be a net fall in the rate of interest on open-market securities. [7] For example, assume that the increase in time-deposit rates induced an increase in time deposits of $100. If this increased demand comes equally from primary securities, demand deposits and other liabilities of intermediaries (all are equally good substitutes in some crude sense), then, given the numbers in the previous example, the demand for demand depos-

[5] The evidence for this is found in S. M. Goldfeld, *Commercial Bank Behavior and Economic Activity*, North-Holland Publishing Company, Amsterdam, 1966, p. 160. Goldfeld calculates the interest elasticities of demand deposits with respect to the bill rate and the time-deposit rate. The elasticity with respect to the time-deposit rate is slightly larger.

[6] This situation would be in direct conflict with Friedman's contention that time deposits and demand deposits are perfect substitutes, while liabilities of other intermediaries are poor substitutes for these liabilities of commercial banks. For a good discussion, see David Laidler, "The Rate of Interest and the Demand for Money—Some Empirical Evidence," *Journal of Political Economy*, December 1966.

[7] James Tobin and W. C. Brainard, in "Financial Intermediaries and the Effectiveness of Monetary Controls," *American Economic Review*, May 1963, mention quite casually that the increases under Regulation Q in 1961 led to lower, rather than higher, mortgage rates (see footnote 5, p. 397). Furthermore, they point out that in their model, increases in "the deposit rate" are expansionary only if there is no complementarity in the system.

its falls by $33⅓ while supply falls by $20; hence, open market rates fall.

III. *Conclusion*

It seems clear from this analysis that the impact of a permissible increase under Regulation Q, *ceteris paribus*, may very well result in a fall in open-market rates. There are two qualifications which ought to be mentioned. First, the implicit assumption of our discussion was that open-market "rates" all behaved the same way. Actually, we were identifying "open-market rates" with one open-market rate on a "representative" primary security. However, once we admit more than one rate, say a maturity structure of rates, then the impact of a change in permissible rates under Regulation Q might twist the rate structure—that is, reduce the spread between the short-rate and the long-rate.[8] Precisely how the "level of rates" is defined in that case will determine (among other things) whether "open-market rates" rise or fall.

The second qualification concerns the fact that the argument presented here ignores the dynamic context in which the MTDR is usually raised. We have shown that the impact of a *ceteris paribus* increase in the MTDR is likely to be expansionary—that is, open-market rates will fall.[9] However, the introductory paragraph to this paper suggests that rates under Regulation Q are often increased in response to increases in rates on the liabilities of nonbank financial intermediaries. Although the net effect of Regulation-Q increases in this situation will still be expansionary (under the conditions cited above), if Regulation-Q rates are not increased, funds will flow from time deposits to deposits at nonbank financial intermediaries (assuming these assets are substitutes for each other). Since nonbank intermediaries have zero reserve requirements, there will be a mobilization of reserves on time deposits. Assuming that these intermediaries buy primary securities, with all their funds, there will be a decrease (or smaller increase) in open-market rates, which may be greater than the decrease (smaller increase) in rates when Regulation-Q rates are increased (to prevent the outflow of funds).[10]

This last argument suggests that although rate increases under Regulation Q are likely to be expansionary, if this increase occurs in response to increases in rates on liabilities of nonbank financial intermediaries, the alternative of not increasing rates under "Q" may be even more expansionary. This point, coupled with the desire to maintain the competitive position of commercial banks in the savings market, suggests that it may very well be rational to increase rates under Regulation Q even in periods of tight money. At the same time, however, a compensating increase in tightness via (say) open-market sales ought to be undertaken to offset the net expansionary impact of increased Regulation-Q rates.

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[8] See F. Modigliani and R. Sutch, "Innovations in Interest Rate Policy," *American Economic Review*, May 1966, for a full discussion of this possibility.

[9] This case is similar to the impact multiplier in an econometric model, that is, a change in an exogenous variable is imposed on an equilibrium system, and we examine the new equilibrium values of the endogenous variables.

[10] This clearly depends upon the degree of substitutability between time deposits and demand deposits compared with that of nonbank deposits and demand deposits. Although it would take us too far afield in this paper, a rigorous analysis of the substitute relationships that produce various results could certainly be undertaken by constructing a (mathematical) general equilibrium model of the financial sector.

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Banking Structure and Nonbank Financial Intermediaries

Recently, considerable attention has been devoted to the determination of the effects of banking "structure" on banking "performance" and in turn on economic welfare. Such a question is important to economists and public officials because it asks how well the market mechanism together with the host of banking regulations succeed in accomplishing their functions. Our hypothesis is that, although alternative banking structures may influence the performance of commercial banking and, therefore, the willingness or ability of commercial banks to supply certain services, these effects will be offset as new alternatives are presented to the public by firms offering close substitutes.

We begin by estimating the parameters of a relation designed to predict the level of total "saving-type" deposits (defined as time deposits in commercial banks, deposits of mutual savings banks, and shares of savings and loan associations and credit unions) in a given market area, and the extent to which this total is independent of the banking structure in that area. The same type of experiment is then performed with total financial (bank and nonbank) offices per capita, a variable representative of the quality of services provided to the public by banks and their competitors. Essentially, we attempt to predict both of these variables (total savings deposits and financial offices per capita) by various measures of economic activity (including demographic variables) and indices of commercial banking structure. These relationships are

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designed to isolate the importance of banking structure in the determination of total banking services provided to the public. Following this, we explain the share of total savings-type deposits and total financial offices which is provided by commercial banks. The stronger are the structural factors here, the greater the influence of such variables in determining the type of financial institution which will provide the services in question. Significant structural variables in these equations create a presumption that structure affects commercial banking performance. We argue that nonbank competition arises from the inability or unwillingness of commercial banks in an area to meet the needs of the consuming public adequately, and that we may associate a smaller share of these services being provided by commercial banks with a "poorer" performance of the commercial banking system, other things equal.[1]

Our study uses cross-section data by state. The controlling reason for choosing the state rather than some other market area was the availability of data on the large number of variables which we thought to be relevant. Another advantage in using statewide data is that state banking laws are extremely important in determining banking structure, particularly as regards branching and entry.[2] These structural variables can be defined unambiguously only for areas lying completely within a state.[3]

I. *Structural Variables*

The structure of commercial banking is described by such characteristics as the number of firms in the market, their relative sizes, entry conditions, and limits on rates they may charge or pay. Although there are substantial and well-known difficulties in using a limited group of variables as measures of structure, we have restricted ourselves to a few indices of structure which we consider to be most revealing. Our results, therefore, must be interpreted with caution.

We have employed two concentration ratios, the percentage of deposits in the three and in the five largest commercial banks.[4] To reflect the size distribution of

[1] If the structural variables have a substantial effect on the total volume of services provided and also on the share of these services performed by commercial banks, our conclusions about their effects on bank performance may require qualification. In such circumstances, it may be misleading to conclude that a greater market share for commercial banks reflects superior performance.

[2] Even here some problems exist. The existence of "home-office protection" in some states prevents branching into towns where the home office of an existing bank is located. With "home offices" sometimes being established by historical accident, different degrees of regulatory constraint on entry will exist in different areas of the state. In addition, it must be borne in mind that in many limited branching states the restrictions are so drawn as to make entry effectively much more difficult in certain sections of the state.

[3] Consideration was given to the use of census-defined Standard Metropolitan Statistical Area (SMSA) data. The SMSA is probably a closer approximation of the relevant market area for the products with which we are concerned. However, there is only a mild presumption that the distribution of banks and their competitors is any more homogeneous within an SMSA than in an entire state. Moreover, SMSA data are indicative of performance only in a "big city" and its suburbs. The relationships revealed may be very different from those in areas in which population is more dispersed, and where the distance to the nearest financial institution becomes a more relevant consideration in arriving at an index of performance. This is in line with the conclusions reached by Shull and Horvitz, "Branch Banking and the Structure of Competition," *The National Banking Review*, 1, March 1964, pp. 301-341.

[4] The two concentration ratios may reveal substantially more information than either one employed separately. For example, each of two market structures may have the three largest firms with 60 percent of the assets in the industry. In one structure, all the assets may be

competing banks more accurately, we have used the average (mean) bank deposits and the coefficient of variation (standard deviation divided by the mean) of bank size.

The third structural variable employed is an indicator of the state's branching law. States are classified into those with unit banking (no branch banks), those with limited branching (within specified areas of the state), and those with statewide branching. It should be noted that all branching is limited in some respects inasmuch as entry into banking is always somewhat limited. A further attempt to characterize branching practices was made by including the average number of offices per bank as a supplement to the more basic division. The final structural measure is a dummy indicating the presence or absence of mutual savings banks. It can be argued that insofar as mutual savings banks are a unique institution, performance will be different in states where they operate.[5]

controlled by five firms of equal size; in the other there may be three "giants" and 20 smaller competitors. Clearly, these structures are different, and the difference cannot be revealed by any single ratio. In this particular example, our two ratios would be substantially more revealing. Suffice it to say that a concentration ratio is merely a convenient method of aggregation and, ideally, the entire size distribution of firms must be considered. Practically, however, such a procedure is not possible. In our particular study, it turns out that the results do not differ significantly when we employ the three-firm concentration ratio or when we use the five-firm ratio. Therefore, we confine ourselves to presenting results using the ratio for three banks only. Needless to say, it must be borne in mind that no concentration device can give a complete answer to questions such as "how much monopoly power is there?"

[5] In several states with mutual savings banks, their number is not great. But, at the risk of underestimating the importance of the mutual-savings-bank variable, we have grouped together all states having such banks.

II. *Savings-Type Deposits*

A reduced-form equation to predict the level of total savings deposits was derived from a simple supply and demand model. Such a derivation appears in the Appendix. In the reduced-form equation, saving-type deposits are made to depend upon personal income (Y), and on the average interest rate paid on savings-type deposits (r_t). To this basic equation, several other independent variables were added to represent banking structure. Structure is described by the average number of offices per commercial bank (B), the distribution of banks by deposit size (A and V), and by a set of dummy variables which classify the states according to whether mutual savings banks are operating (M), whether the state branching law permits statewide branching (S), limited-area branching (L), or unit banking.

The parameters of the following relation were estimated, using statewide cross-section data for the years 1953 through 1960: [6]

$$(1) \qquad T = f(Y, r_t, B, M, S, L, A, V)$$

where:

- T = total savings-type deposits
- Y = personal income (billions of current dollars)
- r_t = weighted average interest rate payable on savings-type deposits (in percent)
- B = average number of offices per commercial bank

[6] The estimation was not performed for the years since 1960, because of the introduction of time certificates of deposit in 1961. A breakdown of CDs outstanding, by state, is not very meaningful, since much of this money gravitates to money-market centers. Also, the factors influencing CDs are very likely to be different from those determining total savings-type deposits, and hence the relationships with which we are concerned might be obscured in the years since 1961.

M = mutual-savings-bank dummy variable

S = statewide-branching dummy variable

L = limited-branching dummy variable

A = mean (deposit) size of bank (billions of dollars)

V = coefficient of variation of bank size

All variables were specified to enter in a linear fashion. This model yields coefficients of determination ranging around .9 for all years, and estimated coefficients which are remarkably stable from year to year.

As expected, personal income is the most important explanatory variable, and the rate payable on savings-type deposits (r_t) enters with a positive sign. Personal income and this interest rate, together, consistently explain somewhat over 80 percent of the variance in total savings-type deposits.

The variables characterizing the distribution of bank size (A and V) both exert a positive influence on T. Other things equal, larger commercial banks and greater variance of bank size are associated with higher levels of T. The variable M, which attempts to account for the influence of mutual savings banks on the level of savings-type deposits is consistently positive and statistically significant at the 5 percent level in all years. The tendency of states with mutual savings banks to generate a higher level of savings-type deposits may be the result of expanded markets for savings deposits and intensified competition induced by these banks.[7]

The variables describing the extent of commercial bank branching (S, L, and B) do not enter into equation (1) in a statistically significant fashion. This result is consistent with our initial hypothesis that structural variables would not affect the level of savings-type deposits. However, the importance of the structural measures A and V, as well as the existence of multicollinearity among the structural variables, prompted further investigation of the branching variables.[8]

The branching structure can be formulated in a number of different ways. One variation is to specify the branching variable (B) in a nonlinear fashion as (1/B). Such a formulation implies that an increase in B has a greater effect on T when the initial average number of branches is low. A more detailed description of the branching apparatus specifies the coefficient of branching-law dummy variables (S and L) to be a linear function of B or 1/B. In addition, the dummy variables S and L were combined into a single variable to simply distinguish between branch banking and unit banking states. Because there is little *a priori* reason to choose among the alternative specifications, we chose that formulation of the branching variable which provides the best overall fit.

A more detailed description of the branching apparatus enabled us to increase the explanatory power of our model significantly. Since the extent of branching in limited branching states varies substantially, it was decided to estimate the effect of B in these states. This was done by specifying the coefficient of L to be a linear function of the average

[7] It is possible that the apparent effects of these variables may reflect the influence of an important omitted variable that is highly correlated with the structural measures. We should be aware of the possibility of regional influences throughout this paper, for certain of our independent variables (particularly the branching variables) are, in fact, highly correlated with region. This argument is developed by T. G. Flechsig in *Banking Market Structure and Performance in Metropolitan Areas,* Board of Governors of the Federal Reserve System, 1965.

[8] The highest simple correlations are between B and A (0.87), B and S (0.57), and S and A (0.52).

number of branches. The estimated parameters for this model for 1960 are:[9]

(2) $$T = -2.78 + .42Y + .87r_t + .69M - .41S - 5.4L + 1.91B{\cdot}L + 1.01A + .02V$$
(13.7) (2.1) (2.3) (0.8) (4.7) (6.3) (2.2) (1.9)* $R^2 = .95$

*figures in parentheses are "t" values.

In this model, the effect of all variables, except those representing branching, is much the same as in equation (1). The statewide-branching dummy remains unimportant, but the variables describing limited branching become statistically significant. In limited branching states, the level of total savings-type deposits increases with the average number of commercial bank offices.[10]

The above model (2) was reformulated and estimated in per-capita terms, yielding the following result for 1960:[11]

(3) $$T/P = -1.37 + .54Y/P + .35r_t + .25M - .03S - .21L + .09B{\cdot}L + .08A + .001V$$
(3.7) (2.1) (2.3) (0.8) (2.6) (2.4) (1.7) (0.9)

$R^2 = .78$

Estimates of the parameters of this model indicate that the structural variables no longer play as important a role. The per-capita specification is in general more convincing. First, this result conforms more closely to our original theory that commercial bank structure does not have an important influence on the output of savings-type deposits. Second, per-capita deposits better represent the relative importance of this type of product than does total deposits. Finally, this specification permits clearer isolation of the interest-rate effect.

III. *Per-Capita Financial Offices*

Financial offices per-capita is designed to measure the quality of banking service, on the assumption that a greater number of offices will produce more convenience to the consumer. We specified a relationship that relates financial offices per-capita (F/P), to the percentage of population in urban areas (U), to per-capita income (Y/P), and to the following structural variables: a concentration ratio for commercial bank deposits (C), the number of offices per-bank (B), the

[9] The estimated parameters for the years 1953-1960 appear in the Appendix, Table 1.

[10] In a recent study, Kaufman and Latta reported that a dummy variable representing branch banking (statewide and limited branching combined) was generally not significant in explaining total savings-type deposits. See G. G. Kaufman and C. M. Latta, "Near Banks and Local Savings," *The National Banking Review*, 3, June 1966. Our analysis reveals that significant additional information can be obtained by a more detailed description of branching.

[11] The estimated parameters for the years 1953-1960 appear in the Appendix, Table 2.

branching variables already employed (S and L), and a variable reflecting the effects of mutual saving banks (M). The parameters of this equation were estimated from cross-sectional data, by state, for the years 1953-1960 (see the Appendix, Table 3). For 1960, the estimates are as follows:

(4)

$$F/P = \underset{(3.1)}{-26.7U} \underset{(1.2)}{-7.9C} + \underset{(2.3)}{9.8Y/P} + \underset{(2.2)}{3.0M} \underset{(2.0)}{-.07S}$$
$$\underset{(2.1)}{-.08L} \underset{(0.9)}{-6.1(1/B)}$$

$$R^2 = .43$$

The percentage population in urban areas is a significant explanatory variable in all years; the more urbanized the state, the smaller the number of financial offices per-capita. This is not unexpected, since where population is more concentrated, a given number of financial offices can adequately serve a larger number of people. Estimates for the years since 1960, indicate that this variable remains significant, even though substantial branching has taken place in metropolitan areas.

Per-capita income exerts a strong positive influence on per-capita financial offices. This implies that wealthier states are willing to purchase the superior services provided by more conveniently situated financial offices. Furthermore, the existence of mutual savings banks (M), exerts a consistently positive and statistically significant effect on the level of total financial offices per-capita (F/P). This further confirms the view that mutual savings banks may provide a somewhat unique service.

The branching variables enter this equation in a significant fashion. However, the negative coefficients on S and L do not indicate that states with branch banking have lower per-capita financial offices. This is so because, by definition, branch banking implies a higher average number of offices per bank, and this latter variable (B) exerts a positive influence on F/P.[12]

The concentration variable (C) has a consistently negative, and statistically significant, effect on the number of financial offices per-capita. This implies that where commercial banking is more concentrated, the overall quality of financial services (as measured by offices per-capita) is poorer. This appears to refute our hypothesis that nonbank financial institutions will respond so as to provide a similar level and quality of service in all areas without regard to the performance of commercial banks. Our measures of the distribution of banks by size (A and V) do not contribute to the explanation of financial offices per-capita.

IV. *Market Occupancy in Banking*

Our hypothesis regarding market occupancy is that, although commercial bank structural variables may play some role in determining the total volume of banking services consumed, they would be of greater significance in explaining the share of financial services provided by commercial banks. This follows from two propositions: (1) that bank per-

[12] In a recent article, Donald Jacobs concluded that for 1963 there was no evident relationship between the number of commercial bank offices and banking structure on a statewide basis. He found, however, that during the period 1946-1963, the number of commercial bank offices increased more rapidly in branch banking states than in unit banking states. Using metropolitan area data, branch banking was associated with a substantially greater number of commercial bank offices. See Donald P. Jacobs, "The Interaction Effects of Restrictions on Branching and Other Bank Regulations," *The Journal of Finance*, May 1965, pp. 332-348.

formance is closely associated with structure; and (2) that nonbank institutions act so as to satisfy consumer demand where the quality or quantity of commercial bank performance is insufficient to accommodate this demand. In order to test this hypothesis, the parameters of the following equation were estimated for each of the years during the period 1953-1960: [13]

(5) $t = t(Y/P, U, r_c, r_s, r_m, M, Z, Z{\cdot}B, C)$

where t = commercial bank share of total savings deposits

r_c = average interest rate paid by commercial banks

r_s = average interest rate paid by savings and loan associations

r_m = average interest rate paid by mutual savings banks

Z = dummy variable indicating the existence of branch banking

Because of the positive correlation between M and r_m, the above relationship was estimated first without the mutual-savings-bank dummy variable. The interest rate (r_m) exerts the expected negative sign and is statistically significant. When the equation is reestimated, specifying both M and r_m, the magnitude of the interest-rate coefficient increases substantially, and the dummy variable enters with a positive sign and is significant in most years. The estimated relation for 1960 is:

(6) $$t = 0.76 + \underset{(2.3)}{.14}Y/P - \underset{(2.0)}{.58}U + \underset{(2.1)}{.07}r_c - \underset{(2.0)}{.11}r_s - \underset{(1.9)}{.19}r_m + \underset{(2.1)}{.47}M + \underset{(2.3)}{.05}Z + \underset{(2.1)}{.01}Z{\cdot}B + \underset{(2.2)}{.11}C$$

$$R^2 = .42$$

All the interest rates variables display the expected signs, and despite the high correlation among them, are significant at the 10 percent level in most years. This suggests that mutual savings bank deposits and savings and loan shares are indeed substitutes for time deposits at commercial banks. The variable representing the existence of savings banks is significant, and its positive sign is perhaps attributable to some regional influence. The concentration ratio appears to exert a positive effect on the ability of commercial banks to maintain their share of the savings-deposit market. The concentration variable for commercial bank deposits (C) is significant in most years at the 5 percent level.

In the explanation of the importance of commercial banks in the savings-type-deposit market, the description of branching is composed of the dummy variable which combines statewide and limited branching (Z), interacted with the average number of offices of commercial banks (B). The extent of commercial bank branching exerts the expected positive influence on the share of savings deposits held by commercial banks in most years.

The percent of population in urban areas (U) bears a significant and consistent negative relationship to the percent of savings-type deposits accounted for by commercial banks. One reason for this may be that specialized savings institutions tend to develop primarily in urban areas, because these institutions tend to be involved largely in the financing of urban residential housing.[14] The

[13] See the Appendix, Table 4.

[14] The same regression was run, using residential construction in place of percent population in urban areas (U). The resulting coefficient was also negative, though not as strong. Residential construction and the degree of urbanization of population are indeed highly

financing of rural residential housing is handled, in large measure, through nonprivate institutions associated with government agricultural programs, and through agricultural loans by commercial banks. In addition, many small rural banks, faced with inadequate loan demand, become rather specialized mortgage institutions.

Per-capita income enters the equation in a positive and statistically significant fashion. This result is consistent with the notion that savings deposits at commercial banks are in some sense a superior good to their nonbank substitutes. As per-capita income rises, individuals may be willing to sacrifice yield in order to obtain the convenience of "one-stop banking."

Turning our attention to the share of total financial offices held by commercial banks, we estimate the parameters of the following functions for the years 1953 to 1960 inclusive:

$$(7) \quad F = f(Y/P, U, C, M, S, L, B)$$

The resulting estimates are tabulated in the Appendix, Table 5. The relation for 1960 is:

$$(8) \quad f = .99 + .01Y/P - .53U + .31C - .09M - .15S - .03L + .007B$$
$$(0.8) \quad (2.4) \quad (2.1) \quad (2.0) \quad (2.1) \quad (2.9) \quad (2.4)$$
$$R^2 = .68$$

Once again, the variable describing the degree of urbanization is important, for reasons similar to those described above. This results from the fact that U has a positive relationship with per-capita financial offices of nonbanks, and a negative relationship with commercial bank offices.

The concentration variable (C) has a consistently positive and significant effect on the share of financial offices held by commercial banks. It is especially interesting that the number of bank offices is not affected by concentration, but the number of nonbank offices is negatively related to C. This result tends to support the presumption that nonbank financial intermediaries are less successful in making inroads into concentrated banking markets. The existence of mutual savings banks (M) again has a significant effect; in those states where savings banks exist, commercial banks are less important in terms of the relative number of financial offices provided. Per-capita income has no discernible influence on the share of financial offices held by commercial banks.

Once again, the state branching law and the *de facto* extent of commercial bank branching appear to have a significant impact on the market occupancy of commercial banks. The expected positive sign on B indicates that commercial banks are relatively important where the average number of offices per bank is greatest.

V. *Conclusion*

We have attempted to demonstrate and explain the relationship between the structure of the commercial banking industry and the relative importance of nonbank financial institutions in providing various financial services. As is so often the case with economic investigation, the results provide only tentative answers.

It is clear from our results that commercial banks and other financial institutions compete for customers in some of the same markets. The distribution of savings deposits among commercial banks, mutual savings banks, and savings and loan associations, appears to be sensi-

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correlated. A variable representing population per square mile was also substituted for U, but this variable was less significant than U, and the resulting equation gave a lower R^2.

tive to the interest rates offered by these institutions. The availability of alternatives to commercial banks also coincides with a higher level of total savings and a greater number of financial offices per-capita.

It is fairly clear that commercial bank structure is associated in some ways with performance. We evaluate overall performance of savings institutions in terms of output as measured by total deposits and financial offices per-capita; relative performance of commercial banks is measured by their share of total services provided. One of the most crucial structural characteristics influencing performance is the commercial bank branching apparatus. This includes both the state branching law and the average number of offices per bank, but the separate influence of these two aspects is difficult to isolate. The larger the average number of offices per bank, the greater will be the total volume of financial services produced, and the greater the proportion of these services provided by the commercial banks. The concentration ratio of commercial banks does not have a significant effect on total output, but is positively related to the performance of commercial banks. In other words, where banking structure is more concentrated, banks may be more successful in fending off competition of other savings institutions.

The conclusion that branch banking is a less restrictive form of public regulation must be interpreted with considerable caution. First, there may be regional influences at work which are not specifically isolated and identified in our equations. Second, the branching variables may not truly reflect the actual stringency of regulatory policy. States which permit only unit banking may in some cases be more favorably disposed to approve applications for new bank charters, while states with statewide branching laws may, in fact, curb entry more severely. When these considerations are introduced, ease of entry becomes a critical structural variable determining bank performance.

Appendix

Supply and demand model:

$$T_D = T_D(Y, r_t)$$

$$T_S = T_S(\bar{R}, \rho)$$

$$T_D = T_S = T$$

where T_D = savings-type deposits demanded
T_S = savings-type deposits supplied
Y = personal income
r_t = weighted interest rate paid on savings-type deposits
$\bar{R}$ = reserve base, or some other variable reflecting the capacity to provide T.
ρ = vector representing the constellation of interest rates available on loans and investments by banks and savings institutions.

The above model is simplified by assuming that stable relationships exist between the reserve base ($\bar{R}$) and personal income (Y) on the one hand, and between ρ and r_t on the other hand. Under these assumptions, solving the above system for T yields the following reduced form equation:

$$T = T(Y, r_t),\ T'_y > 0,\ T'_{r_t} > 0$$

The model as outlined above is not identified, in the sense that the structural parameters cannot be derived from the estimated reduced-form equation. The variables describing banking structure employed in our study are defined as follows:

M = 1 for those states with mutual savings banks
M = 0 for those states without mutual savings banks
S = 1 for states with statewide branching
S = 0 for other states
L = 1 for states with limited branching
L = 0 for other states
Z = 1 for states with branch banking
Z = 0 for states with no branching (unit banking)
B = average number of offices per institution
A = average size (mean) of commercial bank deposits
V = coefficient of variation of bank size (standard deviation ÷ mean)
C = percent of deposits in three largest commercial banks (concentration ratio)

Other variables employed in the study are:

f = percent of financial offices provided by commercial banks
t = percent of savings-type deposits in commercial banks
F = total financial offices per 10,000 population
P = population in state, therefore Y/P income per-capita
U = percent population in urban areas
r_c = interest rate paid by commercial banks
r_s = interest rate paid by savings and loan associations
r_m = interest rate paid by mutual savings banks

Data are derived from the *Survey of Current Business, FDIC Annual Reports, Polk's Bank Directory, Savings Bank Journal,* and *Combined Financial Statement FHLB.*

TABLE 1

Total Savings-Type Deposits (T)

Year	Y	r_t	M	S	L	B•L	A	V	constant	R^2
1953	.35	1.12	.69	—.47*	—5.9	2.10	1.07	.02	—1.86	.95
1954	.33	1.07	.64	—.39*	—5.3	2.01	1.14	.02	—1.94	.95
1955	.34	.84	.62	—.32*	—5.4	2.02	.86	.01*	—1.89	.94
1956	.33	1.18	.75	—.60*	—4.9	1.80	1.12	.02	—2.56	.94
1957	.35	1.03	.75	—.59*	—5.5	1.94	1.06	.02	—2.93	.94
1958	.43	.89	.81	—.28*	—6.5	2.20	.97	.01*	—2.83	.94
1959	.41	.78	.57	—.29*	—5.6	1.86	.98	.01*	—2.72	.95
1960	.42	.87	.69	—.41*	—5.4	1.91	1.01	.02	—2.78	.95

* Not significant at 5 percent level.

TABLE 2

Total Savings-Type Deposits per Capita (T/P)

Year	Y/P	r_t	M	S	L	B•L	A	V	constant	R^2
1953	.44	.29	.29	—.11	—.19	.08	.12	.001*	.96	.77
1954	.42	.27	.27	—.04*	—.23	.09	.14	.002*	1.01	.79
1955	.37	.21	.28	—.05*	—.34	.12	.11	.001*	— .56*	.76
1956	.43	.34	.28	—.12	—.19*	.07*	.16	.002*	— .93	.77
1957	.46	.29	.27	—.09*	—.26	.09	.11	.002*	—1.01	.79
1958	.57	.33	.22	—.03*	—.23	.09	.10*	.001*	—1.20	.77
1959	.57	.36	.24	—.04*	—.22	.08	.09*	.001*	—1.42	.77
1960	.54	.35	.25	—.03*	—.21	.09	.08*	.001*	—1.37	.78

* Not significant at 5 percent level.

TABLE 3

Total Financial Offices per Capita (F/P)

Year	U	C	Y/P	M	S	L	$1/B$	constant	R^2
1953	—29.52	—12.61	13.77	3.72	—.07	—.08	—12.06	29.67	.54
1954	—32.72	—18.00	14.51	4.16	—.07	—.09	—11.39	—31.47	.52
1955	—29.77	—14.71	13.97	4.29	—.06	—.07	—12.61	29.14	.48
1956	—27.11	—12.33	11.61	4.06	—.06*	—.09	—10.01	27.14	.46
1957	—28.41	— 9.07*	9.19	3.68	—.07	—.08	— 9.68	26.37	.47
1958	—29.09	—10.01	8.41	3.26	—.07	—.09	—10.71*	26.11	.48
1959	—27.50	— 7.78*	7.19	2.14	—.06*	—.07	— 7.45*	32.38	.44
1960	—26.71	— 7.94*	9.77	2.97	—.07	—.08	— 6.13*	29.41	.43

* Not significant at 5 percent level.

TABLE 4

Percent of Savings-Type Deposits Held by Commercial Banks (t)

Year	Y/P	U	r_c	r_s	r_m	M	Z	Z·B	C	constant	R^2
1953	.15	—.64	.09*	—.12	.24	.56	—.04	.01	.17	—.01	.41
1954	.16	—.66	.07*	—.10	.26	.54	—.05	.01	.18	—.02	.39
1955	.16	—.67	.04*	—.07	—.28	.54	—.05	.01	.16	.77	.54
1956	.13	—.58	.07*	—.12	—.26	.52	—.05	.01	.12	.88	.48
1957	.13	—.61	.06*	—.08	—.23	.48	—.04	.009*	.19	.72	.41
1958	.15	—.59	.04*	—.05	—.16	.32	—.04	.01	.01*	.49	.37
1959	.15	—.61	.05*	—.09*	—.17	.43	—.04	.007*	.16	.89	.40
1960	.14	—.58	.07	—.11	—.19	.47	.05	.01	.11	.76	.42

* Not significant at 5 percent level.

TABLE 5

Percent of Financial Offices Provided by Commercial Banks (f)

Year	Y/P	U	C	M	S	L	B	constant	R^2
1953	.02*	—.47	.26	—.08	—.13	—.03	.008	.96	.67
1954	.01*	—.48	.24	—.08	—.13	—.04	.009	1.01	.64
1955	.02*	—.51	.22	—.10	—.14	—.04	.009	1.01	.70
1956	—.001*	—.48	.25	—.08	—.15	—.04	.008	1.03	.64
1957	.01*	—.49	.29	—.08	—.15	—.04	.004	1.07	.65
1958	.02*	—.45	.31	—.10	—.13	—.03	.006	.88	.67
1959	.03*	—.56	.24	—.08	—.14	—.04	.005	1.02	.64
1960	.01*	—.53	.31	—.09	—.15	—.03	.007	.99	.68

* Not significant at 5 percent level.

►BRUCE C. COHEN

The Demand for Money by Ownership Category

I. *Introduction*

The purpose of this study is to estimate demand-for-money functions, on the hypothesis that these functions differ for individuals and businesses.

Currency and demand deposits are regarded as substitute forms of media of exchange. Demand and time deposits, and deposits at near banks are treated as substitute forms of stores of value. The demand for each money-type asset is analyzed within the context of the market for all these forms of "wealth-claims."

It is assumed that individual banks will accommodate passively, at given interest rates, any level of deposits desired by the public—and that banks, within each state, will respond with a lag to economic factors that determine the supply of deposits. The interest rates on deposits may then be taken as predetermined; that is, $r_t = f(x_{t-1})$ where:

r: interest rate on a deposit type;

x: economic factors that determine the supply of deposits;

t: time.

The demand-for-money functions may be identified as the result of the relative strengths of regional demand forces, without simultaneous treatment of regional supply equations.[1]

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[1]Identification difficulties do not arise if *current* values of other variables *not* in the demand equations are allowed to enter the supply relations.

The data sample consists of annual observations of the variables, by state. Insufficient data are available for smaller areas, and units larger than states are not always appropriate since some banking controls vary among the states. The dependent variables to be explained by regressions are: total deposits; total demand deposits and demand deposits of businesses, individuals, and farmers; total time deposits and time deposits of businesses and individuals; near-bank deposits; and currency. The limited number of observations of state deposit-ownership data necessitates use of a temporal cross-section model in order to obtain reliable regression estimates.[2]

Section II discusses the general properties of the model, while Section III presents the results of estimation. The concluding section summarizes the findings.

II. *A Temporal Cross-Section Model of the Demand for Money by Ownership Category*

A. The Wealth-Claim Model

The demand for money and other liquid assets can be treated within the framework of the theory of rational asset-choice or balance-sheet equilibrium.[3] Thus, the quantity demanded of a wealth-claim is functionally related to its rate of return, rates on competing assets, and a set of income, wealth, or transactions-type constraints.[4] The demand for a wealth-claim may be represented as:

(1)

$$y^*_t = f(C_{1t}, \ldots, C_{kt}, R_{1t}, \ldots, R_{nt})$$

where:

y^*: desired (denoted by the asterisk) quantity of a wealth-claim

$C_1, \ldots, C_k$: a vector of constraints

$R_1, \ldots, R_n$: a vector of interest rates

t: time

In order to extend Equation 1 to more than one region, the model must be altered to take account of systematic differences among areas.[5] Financial centers may be expected to have greater deposits than predicted on the basis of state income and interest rates. In addition, variation in banking structure may cause differences in the quantity of wealth-claims held. In order to abstract from these factors, the basic demand function is rewritten as:

(2)

$$y^*_t = f(S_t, FC_t, C_{1t}, \ldots, C_{kt}, R_{1t}, \ldots, R_{kt})$$ where:

S: state banking structure

FC: degree to which a state is a financial center

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[2] A temporal cross-section model is one which combines cross-section data from more than one period in such a manner that true cross-section estimates can be obtained.

[3] Allan H. Meltzer, "The Demand for Money: The Evidence from the Time Series," *Journal of Political Economy*, LXXI, June 1963, pp. 219-246, esp. p. 219; John R. Hicks, "A Suggestion for Simplifying the Theory of Money," *Economica* (N. S.), II, February 1935, pp. 1-19; Milton Friedman, "The Quantity Theory of Money: A Restatement," *Studies in the Quantity Theory of Money*, ed. Milton Friedman, Chicago: University of Chicago Press, 1956, pp. 3-21; James Tobin, "Liquidity Preference as Behavior Towards Risk," *Review of Economic Studies*, XXV, February 1958, pp. 65-86; James Tobin, "Money Capital, and Other Stores of Value," *American Economic Review*, LI, May 1961, pp. 26-37; and Harry G. Johnson, "Monetary Theory and Policy," *American Economic Review*, LII, June 1962, pp. 345-384.

[4] The GNP price deflator is used to deflate all dollar variables.

[5] It is assumed that the constraint and interest-rate elasticities are the same for all states and are not stochastic. Application of a single estimating model to areas where these elasticities differ, results in biased regression estimates and a poor fit of the model to the data. Similar difficulties arise if the elasticities are stochastic.

Since the motives for holding wealth-claims, and the response to variations in the constraints, may differ among ownership groups, a separate demand equation is hypothesized for each wealth-claim ownership group.

Assuming that the demand functions are linear in the logarithms of all variables, we have an equation of the following type for each wealth-claim ownership group:

(3)

$$\text{Lny}^{\bullet}_t = \text{LnK} + d_1 \text{LnS}_t + d_2 \text{LnFC}_t + a_1 \text{LnC}_{1t} + \ldots + a_k \text{LnC}_{kt} + b_1 \text{LnR}_{1t} + \ldots + b_n \text{LnR}_{nt} + U_t$$

where the error term, U_t, is assumed to follow a logarithmic-normal distribution and K, d_1, d_2, a_1, . . . , b_n are constants.

If all interregional differences in demand factors are accounted for, the only elements capable of confounding estimates obtained from a pool of cross-sections are differing annual regression intercepts. Therefore, in order to remove the intercept term, each variable is measured as a deviation from the average of all areas during a given year. The equation to be estimated by least squares is:[6]

(4)

$$\text{Lny}^{\bullet}_t = d_1 \text{LnS}_t + d_2 \text{LnFC}_t + a_1 \text{LnC}_{1t} + \ldots + a_k \text{LnC}_{kt} + b_1 \text{LnR}_{1t} + \ldots + b_n \text{LnR}_{nt} + U_t$$

B. Constraint Variables: Individuals[7]

For individuals, income and/or wealth are said to be the appropriate constraint variables.[8] Regional wealth data are inadequate, but the stock of wealth (which may be viewed as the present value of future expected incomes) may be approximated by a weighted average of current and past income.[9] This type of measure, commonly referred to as "permanent income," is used as a wealth proxy.[10] In addition to income and wealth, a retail sales variable (the Federal Reserve department store sales index) is used as a constraint in the demand-for-currency equation. Currency, which is typically held to be a component of the transaction-demand for money, may be more responsive to a variable more closely associated with transactions.

C. Constraint Variables: Business

Sales and operating receipts presumably reflect a transactions-demand.[11] Value-added is included because:

(a) the demand for money is not "furnished by" the number and amount of transactions, but by the ability and

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[6] It will be understood that all variables are deviations about the mean. No new symbols will be introduced to designate this transformation.

[7] The same relationship estimated for individuals is used for farmers, except that net farm income replaces permanent income.

[8] Meltzer, "The Demand for Money: The Evidence . . . ," p. 219; Milton Friedman, "The Demand for Money: Some Theoretical and Empirical Results," *Journal of Political Economy*, LXVII, August 1959, pp. 327-351; and Tong Hun Lee, "Income, Wealth, and the Demand for Money: Some Evidence from Cross-Section Data," *Journal of the American Statistical Association*, LIX, September 1964, pp. 746-762.

[9] For a previous example of the use of permanent income as a wealth proxy, see Friedman, "The Demand for Money. . . ." Because current income is used in the calculation of permanent income, one of these variables has to be suppressed in the regression model.

[10] Net migration among states introduces a bias of unknown magnitude in observed permanent income. See Appendix A, Permanent Income and the Net Migration Bias.

[11] For the transactions viewpoint, see: Edwin Cannan, "The Application of the Theoretical Apparatus of Supply and Demand to Units of Currency," *Economic Journal*, XXXI, December 1921, pp. 453-461; and Robert Neal Dean, "Corporate Cash Balances: Relation to Asset Size and Industrial Activity," unpublished Mas-

willingness of firms (like persons) to hold it;[12] (b) cash for a business firm is a productive resource—a "factor of production" like machinery and labor,[13] and (c) cash is, in addition, a representative of all factors taken together whose product is thus linked to total output rather than transactions in output.[14]

Value-added is incorporated as a constraint, but total receipts of business are not available by state. Disposable personal income is therefore used as a proxy for transactions.[15]

Keynes states that businesses also hold deposits to provide funds for "speculative transactions in capital goods or commodities and financial transactions, e. g., the renewal of Treasury Bills . . ."[16] A large proportion of such speculative balances, including the deposits of financial institutions, presumably, is held with large banks in major financial centers. Percent of population employed in finance, insurance, and real estate—a proxy for business motivations in apportioning their deposits—is added, therefore, as a constraint variable.

D. Uncertainty, Convenience Costs, and Structure

Businesses face less uncertainty than individuals, because of greater synchronization of receipts and expenditures.[17] In addition, the adjustment between actual and desired levels of wealth-claims may be faster for businesses. Business transactions consequently may have a more stable relation to deposit balances than do personal transactions.

Banking structures vary in their capacity to provide services. They differ in the density of offices, their variety, and the quality of their services. It seems desirable to include variables to reflect these differences.[18] Since branch banks may

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ter's thesis, Vanderbilt University, 1955. For the value-added viewpoint, see: Arthur W. Marget, *The Theory of Prices*, I, New York: Prentice-Hall, 1938, pp. 539-540. For a comparison of the two methods, see: Friedrich Lutz, *Corporate Cash Balances, 1914-1943; Manufacturing and Trade*, National Bureau of Economic Research, Studies in Business Financing; New York: National Bureau of Economic Research, 1945, pp. 17-50; and Allan H. Meltzer, "The Demand for Money: A Cross-Section Study of Business Firms," *Quarterly Journal of Economics*, LXXVII, August 1963, pp. 405-422.

[12] Cannan, "The Application of the Theoretical. . . ."

[13] Friedman, "The Quantity Theory of Money. . . ."

[14] Robert E. Snyder, "Business Cash Balances and Their Determinants," unpublished study, Federal Reserve Bank of Chicago, October 1, 1958. Snyder finds a significantly higher correlation of business cash balances with value-added than with total computed receipts.

[15] It has been argued that the rate of return on capital, the capital to labor ratio, and industry-mix all affect the business demand for money. (See Meltzer, "The Demand for Money: A Cross-Section Study . . . ," pp. 407-408). Because quantitative regional data are not available, these factors are subsumed in the constant term.

[16] John Maynard Keynes, *A Treatise on Money*, New York: Harcourt Brace and Co., 1930, I, pp. 46-47.

[17] John J. McCall, "Differences between the Personal Demand for Money and the Business Demand for Money," *Journal of Political Economy*, LXVIII, August 1960, p. 368.

[18] Variables measuring the impact of various structural elements on the demand for banking services, such as density of banking offices, will be suppressed in order to identify variations in deposits owing to variations in the structure itself.

A branching-legislation variable will not be defined for near banks, because there are no legal statutes governing the establishment of branches by federally-chartered savings and loan associations. There is, however, a strong correlation between states permitting branch banking and those with multiple-office savings and loan associations. This is the result of the Federal Home Loan Bank Board's policy of applying the most liberal interpretation of commercial-bank branching legislation to savings institutions. In Texas and Florida, federally-chartered associations may branch, but state banks and associations may not. Thus, a simple

have lower average costs than comparable conglomerations of unit banks (same total size, number of offices, and distribution of deposits among offices), they may operate in areas incapable of supporting a unit bank.[19] As a result, branch-banking areas may have a high level of deposits. A dummy variable indicating presence or absence of permissive branch-banking legislation is included. Since the holding company form of banking may possess some advantage in accommodating to the changing needs of a shifting and growing population, a dummy variable denoting presence or absence of the holding company form is also included.[20]

The presence of mutual savings banks also may influence the level of bank deposits, and an appropriate dummy variable is included to measure this phenomenon.[21]

E. Yields

For each wealth-claim demand function, the relevant interest rates are those on demand, time, and near-bank deposits.[22] Service charges as a percent of demand deposits is used for the rate on demand deposits, and interest payments divided by average balances is the measure used for time and near-bank deposits. In addition to direct measures of interest rates on liquid assets, the demand-for-wealth-claim relations should incorporate noninterest returns, such as gifts and premiums, because these payments also affect the relative attractiveness of wealth-claims.[23] Per-capita advertising expenditures are incorporated into the demand relations for near-bank deposits, in order to capture this phenomenon, so far as possible.

III. *Empirical Results*

Regressions specifying the factors identified are estimated for:[24]

(a) total deposits, by state, for 1950-1960;

(b) total demand deposits, by state, for 1950-1960;

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dichotomy of state legislation for savings and loan associations is not easily defined. See Bruce C. Cohen and George G. Kaufman, "Factors Determining Bank Deposit Growth by State: An Empirical Analysis," *Journal of Finance,* XX, March 1965, p. 65. For Federal Reserve districts, number of branches divided by number of bank offices will be used as a structure proxy.

[19] Stuart I. Greenbaum, "Banking Structure and Costs: A Statistical Study of the Cost-Output Relationship in Commercial Banking," unpublished Ph.D. dissertation, The Johns Hopkins University, 1964, pp. 286-322.

Horvitz notes that an office of a branch bank may thrive in small towns and rural areas in which unit banks cannot survive. "Thus the Comptroller of the Currency has pointed out that in many of these situations a new bank is not the answer for the amount of available business is inadequate to permit profitable operation. . . . On the other hand, these communities could in a great number of instances, readily support a branch office of a sizable institution." Paul M. Horvitz, *Concentration and Competition in New England Banking,* Research Report No. 2; Boston: Federal Reserve Bank of Boston, 1958, p. 53, quoting U. S. Congress, Joint Committee on the Economic Report, *Monetary Policy and the Management of the Public Debt: Replies to Questions and Other Material,* S. Doc. No. 123, Pt. 2, 82nd Cong., 2d Sess., 1952, p. 927.

[20] W. Ralph Lamb, *Group Banking,* New Brunswick: Rutgers University Press, 1962, p. 148.

[21] The ratio of long-term savings to income in local institutions is lowest in the absence of mutual savings and branch banking. Irving Schweiger and John S. McGee, *Chicago Banking, the Structure and Performance of Banks and Other Related Financial Institutions in Chicago and Other Areas,* Chicago: University of Chicago, 1961, p. 8.

[22] Differences in yield due to differences in state taxes are ignored.

[23] Edgar L. Feige, *The Demand for Liquid Assets: A Temporal Cross-Section Analysis,* Englewood Cliffs: Prentice-Hall, 1964, pp. 19-20.

[24] The 5 percent test level will be used throughout for significance tests.

(c) demand deposits of businesses, farmers, and individuals, by state, for 1950-1960;

(d) total time deposits, by state, for 1950-1960;

(e) time deposits of businesses and individuals, by Federal Reserve district, for 1957-1958;

(f) near-bank deposits, by state, for 1950-1960; and

(g) currency, by Federal Reserve district, for 1948-1952.

A. Demand Deposits of Individuals

The choice between current or permanent income makes little difference in the demand deposit equation for individuals. An F test applied to the residual variances of equations in which each income measure is used alternatively, reveals that use of permanent income results in a slightly better equation for the 1958-1960 period.[25] The 1956-1960 and 1950-1960 periods show no significant difference between equations in which the constraints are used alternatively (see Table 1. ***All statistical tables appear in Appendix B***). Only during 1958 and 1960, does the correlation between permanent income and demand deposits of individuals exceed the correlation between income and demand deposits of individuals by more than .002 (see Table 2). Although permanent income does not appear to be a consistently better constraint, it will be used throughout the rest of the study. In order to test whether different constraints are appropriate for businesses and individuals, the equation for demand deposits of individuals was regressed against the financial center variable, and proved insignificant.[26]

Demand deposits of individuals were found to be significantly related to permanent income, service charges as a percent of demand deposits, and the interest rate on time deposits (see Table 3). Variation in the interest rate on near-bank deposits did not appear to be of importance.[27] The signs of the net regression coefficients are as expected; the cofficients of the constraint and own-interest rate are positive, and the cross-elasticity term (the interest rate on time deposits) is negative.[28] The constant term is insignificant.[29]

In order to test the stability of the equation, the model was applied to the subperiods: 1950-1955 and 1956-1960. An F test applied to the residuals rejected the null hypothesis that the pooled regression for the whole period differed from those obtained from the two segments.[30] In order to test the hypothesis that the model explained a significant proportion of the variation in demand deposits of individuals, an F test was applied for both the entire period and subperiods. This hypothesis was accepted in every case. It was also found that the level of individually-held demand deposits was higher in states allowing bank holding companies and lower in states

[25] This period is most relevant for comparing alternative constraints, since demand deposits by ownership category are approximated by use of Federal Reserve district data prior to 1958.

[26] The calculated t-statistic for this variable was 0.2.

[27] In order to reduce multicollinearity, variables not statistically significant were dropped.

[28] A *fall* in service charges as a percent of demand deposits is associated with a rise in deposits held. Since this variable is treated as a positive number, its net regression coefficient is as expected. In the only other cross-section demand-for-money study in which service charges are employed—Feige's—the variable is treated as a negative number and the net regression coefficient is *positive*. See Feige, *The Demand for Liquid Assets . . .*, pp. 24-25.

[29] This term should be zero, because all variables are measured as deviations from the (annual) mean for all states. None of the equations have t statistics exceeding 0.03.

[30] The Chow test is often employed for the purpose described above. See Gregory C. Chow, "Tests of Equality between Sets of Coefficients in Two Linear Regressions," *Econometrica*, XXVIII, July 1960, pp. 591-605.

having mutual savings banks. The latter result suggests that demand and near-bank deposits may be competitive.[31] The branch banking variable proved insignificant.

B. Demand Deposits of Business

The alternative constraints for demand deposits of business are financial-center, together with either income or value-added.[32] For the period 1958-1960, value-added and financial-center is the only acceptable combination of constraints (see Table 4).[33] The financial-center variable is not consistently significant in a regression in which permanent income is the constraint, yet it seems clear, *a priori*, that some states are important financial centers. In addition, an income coefficient greater than one was obtained, implying that, with respect to transactions, there are diseconomies of scale. William J. Baumol estimates that the elasticity with respect to transactions is about 0.5, and Allan H. Meltzer finds that it is approximately one.[34] With respect to business transactions, no economist claims that money is a luxury good.[35] Accordingly, the combination of permanent-income and financial-center is rejected in favor of value-added and financial-center. This yields results that are consistent with economic theory.[36] The financial-center variable is positive and significant, and the value-added variable is positive, significantly greater than zero and less than unity.[37]

To summarize, business holdings of demand deposits were related to service charges as a percent of demand deposits, value-added, and financial-center. Demand deposits of business were not significantly related to the banking structure variables, or to interest rate variables other than service charges. The regression exhibited stability and consistently explained a significant proportion of the variation in the dependent variable (see Table 5).[38]

C. Demand Deposits of Farmers

Farm income was by far the most important determinant of demand deposits

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[31] This result appears to contradict the findings of Schweiger and McGee, *Chicago Banking . . .*, p. 8.

[32] In order to test the hypothesis that the constraints are the same for both businesses and individuals, permanent income is tested against the value-added variable.

[33] The appropriate test period here is 1958-1960. Before 1958, state data for demand deposits of business are approximated with the use of Federal Reserve district data. The results for the entire period 1950-1960, also support these conclusions, however.

[34] William J. Baumol, "The Transactions Demand for Cash: An Inventory Theoretic Approach," *Quarterly Journal of Economics,* LXI, November 1952, pp. 545-556. Allan H. Meltzer, "The Demand for Money: A Cross-Section Study . . . ," p. 414.

[35] Friedman and Schwartz do not dichotomize the demand for money into ownership components. It is not possible to say whether their finding that money is a luxury good applies to all ownership groups. See James Tobin, "The Monetary Interpretation of History: A Review Article," *American Economic Review,* LV, June 1965, pp. 464-465.

[36] This result is in accord with the conclusion of Snyder, "Business Cash Balances. . . ."

[37] This supports Baumol's hypothesis that there are economies of scale in business holdings of deposits.

[38] The service charge elasticity should be interpreted with caution. Total service charges cannot be separated into individual and business components. In addition, the service charge variable may better reflect the influence of small balances than large ones. In comparison to the elasticity calculated for individually-held balances, the measure obtained for business-held balances may seem "large," but the estimated standard error of this variable is also large. At the value of $-.21$, the $\pm 2\sigma$ range of this variable indicates that the observed variation in business deposits about the mean was less than $\pm .5$ percent (at the decade midpoint) on account of service charges.

of farmers.[39] A regression of farm income on demand deposits of farmers provided a relationship that consistently explained a substantial proportion of the variation in the dependent variable. None of the interest-rate-variable coefficients was consistently of the predicted sign or significant in all subperiods.[40] A comparison of regressions for the 1950-1955, 1956-1960 subperiods with 1950-1960, indicated stability (see Table 6).

D. The Dichotomy Hypothesis

There is evidence that the demand-for-money functions differ among wealth-claim ownership groups. Table 7 presents a total (aggregate of all sectors) demand-deposits function that consistently explains a high proportion of the variance in the dependent variable and is stable during the test period. A comparison of this equation with those for demand deposits of businesses and individuals, which make up the bulk of demand deposits, reveals the sort of misinformation that can result from unwarranted aggregation. For individuals, the interest rate on time deposits was significant ($t = -2.040$), but for total demand deposits, this variable was not significant ($t = -.2211$).[41] This would appear to explain why Bruce C. Cohen and George G. Kaufman, who do not distinguish between ownership categories, failed to find a significant cross elasticity between demand and time deposits.[42] Edgar L. Feige found a weak cross-substitution relation.[43]

Friedman finds an income-elasticity of 1.8, whereas Feige, Meltzer, and Cohen and Kaufman all obtain elasticities of one (or slightly less).[44] A comparison of the permanent-income elasticity of individual and total demand deposits reveals that the two are different. The elasticity for individually-owned demand deposits is both significantly greater than one and significantly greater than the elasticity for total demand deposits.[45] This again points up the potential danger of unwarranted aggregation.

A regression of total deposits on financial-center, permanent-income, service charges as a percent of demand deposits, and the interest rate on time deposits consistently explains a large proportion of the variation in the dependent variable and the equation exhibits stability over time (see Table 8). The variables common to all three equations are financial-center and permanent-income. Income is of the same approximate importance as measured by the partial correlation coefficients in all three equations. Yet financial-center is much more important in the total-deposit equation than in either the time- or demand-deposit equation. Indeed, the financial-center variable is more important in the total-deposits equation

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[39] Because of insufficient data, permanent farm income was not computed.

[40] The failure of interest-rate variables to be significant cannot be taken as conclusive evidence of no relation. The interest rates used are based on data for all deposits in a state. Since farm deposits typically represent a small proportion of total deposits in most states, the interest rates used may not reflect rates paid at banks which hold the bulk of farm deposits.

[41] This result is from a regression in which the independent variables are: service charges as a percent of demand deposits, financial-center, value-added, permanent income, and interest rate on time deposits.

[42] Cohen and Kaufman, "Factors Determining Bank Deposit Growth . . .," p. 62.

[43] Feige, *The Demand for Liquid Assets . . .*, pp. 22-25. It should be noted that the necessary deposit ownership data were not available to Cohen and Kaufman and Feige at the time they carried out their research.

[44] Friedman, "Demand for Money: Some Theoretical . . .," p. 337; Feige, *The Demand for Liquid Assets . . .*, p. 37; Meltzer, "The Demand for Money: The Evidence . . .," p. 225 (Meltzer estimated wealth elasticities); and Cohen and Kaufman, "Factors Determining Bank Deposit Growth . . .," p. 65.

[45] The calculated t's are 4.63 and 4.32, respectively. The tabular t's are approximately 1.65.

than in any deposit component studied.[46] This reinforces the finding that demand-for-money investigations should distinguish between ownership as well as type of wealth-claim.

E. Time Deposits of Business and Individuals

The only regional data for time deposits by ownership category are in a survey by Federal Reserve districts for 1957 and 1958. With so few observations, it is difficult to identify the factors determining the demand for time deposits. However, total time-deposits data, by state, are available for the 1950-1960 period. These data reveal that about 90 percent of the variation in time deposits can be attributed to permanent-income, financial-center, and the interest rates on time and near-bank deposits (see Table 9). By far, the most important variable is permanent-income. Its net regression coefficient is over 50 times the standard error, and its partial correlation with the dependent variable is over two and one half times that for any other variable. When the regression model is applied to time deposits of individuals, the partial correlation coefficient of permanent-income is again over two and one half times that of the second most important variable. The regression of time deposits of individuals also yields an equation with good fit ($R^2 = .90$) and a permanent-income coefficient with small estimated variance ($t = 14.2$). However, the income coefficients are significantly different in these two equations.[47] The constraints are the only significant variables in the regressions of time deposits of businesses and individuals. Approximately 39 percent of the variation in the business-held time deposits is explained by value-added, and 90 percent of the variation in individually-held time deposits is explained by permanent income.[48]

F. Near-Bank Deposits

The demand to hold near-bank deposits was associated with service charges as a percent of demand deposits, interest rate on near-bank deposits, permanent income, and advertising expenditures. The interest rate on near-bank deposits, together with advertising, comprise the own-interest rates here.[49] Surprisingly, the advertising component was far more significant than the interest rate on near-bank deposits, and the interest rate on time deposits was insignificant. A weak substitution relation between demand and near-bank deposits was found (see Table 10).[50]

G. Currency

Currency holdings by Federal Reserve district were related to permanent income and the interest rate on near-bank deposits (see Table 11).[51] There does not appear to be substitution between currency and commercial bank deposits. Kaufman, however, shows that this relationship may be disguised by the impact of wartime hoarding of currency.[52]

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[46] The distribution of interbank and governmental deposits probably explains this phenomenon.

[47] The calculated t-statistic is 3.04 and the tabular t is 1.96.

[48] The fact that the other variables did not appear significant, may be attributed to the small number of degrees of freedom, and the heterogeneity, of Federal-Reserve-district banking structures.

[49] See Section II.

[50] All these findings are consistent with those of Feige. *The Demand for Liquid Assets . . .*, p. 30. However, Feige finds that the substitution relation strengthened over time. Our evidence does not support this.

[51] The imputations used to estimate currency are based in part on countings of notes at Federal Reserve Banks. The other interest elasticities were of the correct sign but insignificant.

[52] "The New York Federal Reserve Bank estimated that about one-half of the near $20

Accordingly, any conclusion regarding the currency equation is, at best, tenuous. The sales variable was tried as an alternative constraint and proved to be less useful than permanent income. The permanent-income coefficient is somewhat greater than one, but the result is difficult to evaluate because data for currency holdings, by both region and ownership category, are unavailable.

IV. *Summary*

The demand-for-wealth-claims model was accepted as a plausible explanation of the quantity of deposits held. This theory explained a significant proportion of the deviation in the dependent variables for every wealth-claim in the model. The dichotomy hypothesis—that the ownership of wealth-claims matters—was accepted. The results and implications may be summarized as follows:

A. Demand Deposits of Individuals

1. The income elasticity was slightly more than one.
2. The own-price coefficient indicates that the quantity of demand deposits held by individuals will be reduced with increases in service charges.
3. Demand and time deposits appear to be moderate substitutes.
4. Demand deposits and mutual-savings deposits are weak substitutes in the short run as indicated by the cross-elasticity term, but are somewhat better substitutes in the long run since the mutual-savings bank dummy variable was strongly negative.
5. Commercial banking structure does not seem to be important in determining the level of deposits.[53]

B. Demand Deposits of Business

1. The elasticity of business-held demand deposits with respect to value-added is positive and significantly less than one.
2. As service charges on demand deposits rise, business demand-deposits fall.

C. Demand Deposits of Farmers

1. Demand deposits of farmers are strongly related to net farm income.
2. The level of farm deposits is not affected by regional differences in banking structure.

D. Time Deposits

The income elasticity of time deposits of individuals is greater than one, and greater than that for demand deposits of individuals, but the income elasticities of total-demand and total-time deposits are almost identical (approximately one). The income coefficient of individually-owned time deposits is significantly greater than that for individually-owned demand deposits.[54] Time deposits of business are significantly related to value-added. The net regression coefficient of the value-added variable is of the same order of magnitude for both time and demand deposits of businesses.

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billion of currency issued during the war years found its way into hoards or was destroyed. . . . To the extent that currency returned only slowly from hoards and accommodated increased demands by nonhoarders, changes in currency do not reflect very accurately the influence of current economic and structural stimuli." George G. Kaufman, "The Demand for Currency," Progress Report to the Ad Hoc Working Group on Monetary Linkages, Federal Reserve Bank of Chicago, June 1965, pp. 26-27.

[53] The holding company variable was significant at the 5 percent level for most, but not all, time periods.

[54] The t statistic for the difference between the two net regression coefficients is 9.91. The tabular t is 1.96.

E. Near-Bank Deposits

1. Near-bank deposits are strongly associated with income.
2. Substitution between near-bank and commercial-bank deposits appears to be weak in the short run, as is indicated by the service-charges variable. The holding company variable, however, is negative and significant. Thus, in the long run, these wealth-claims may be somewhat better substitutes.
3. The level of per capita advertising expenditures among states is an important determinant of near-bank deposits.
4. The total of near-bank deposits appears to be greater in states where mutual savings banks are important.

F. Currency

Permanent income is the most important determinant of currency holdings.

G. Implications for the Demand for Money

Aggregation errors often result from the use of demand-for-money equations which do not take account of the ownership dimension. The questions regarding the constraint, own-price and cross-elasticity terms, and the definition of money, are all affected by this issue.

Appendix A

Permanent Income and the Net Migration Bias

Permanent income can be calculated from past measured income if there has been no interregional movement of wealth-claim owners. In fact, this is not the case. Migration data during the period in question reveal shifts of population. If owners of wealth-claims tend to shift their bank and near-bank deposits to the areas to which they migrate, permanent income as calculated from past measured income will be biased. A simple example will help clarify this problem.

Consider two areas, A and B, with populations of 100 each. Each of the 200 persons earns \$1 in every time period. During the first time period, one person moves from A to B. The current income is now \$101 in B and \$99 in A. Permanent income, as calculated from past observed incomes, is:

$$\text{in A)}\ K(101) + K\lambda(100) + K\lambda^2(100) + \ldots$$

$$\text{in B)}\ K\ (99) + K\lambda(100) + K\lambda^2(100) + \ldots$$

where K and λ are constants, and $0 \leq \lambda, K \leq 1$.

But the future income stream is now expected to be \$101 in B and \$99 in A. In order to anticipate future income correctly, it is necessary to add $K\lambda(1) + K\lambda^2(1) = \ldots$ to the permanent income in B and subtract the same amount from A. This adjustment accounts for the past income of the migrant. Since the income distributions of migrants are not known, it has not been possible to adjust the observed income data.

Appendix B

Statistical Tables

Data sources for all tables are available upon request to the author.

TABLE 1

Tests of Differences in Residual Variances: Demand-Deposits-of-Individuals Equations with Alternative Constraints*

Time period	Constraint	Residual variance	F (calculated)	F (tabular)
1958-1960	Income	38.301	1.38	1.32
	Permanent income	27.835		
1956-1960	Income	33.776	1.22	1.26
	Permanent income	27.672		
1950-1960	Income	29.616	1.10	1.15
	Permanent income	26.994		

* Other independent variables in the equations are: service charges as a percent of demand deposits, the interest rate on time deposits, and the holding-company and mutual-savings-bank dummy variables.

TABLE 2

Coefficients of Correlations Between Income, Permanent Income, and Demand Deposits of Individuals

Time period	Coefficient of correlation between		
	Income and permanent income	Income and demand deposits of individuals	Permanent income and demand deposits of individuals
1950	.9997	.9146	.9130
1951	.9996	.9176	.9178
1952	.9994	.9171	.9159
1953	.9996	.9119	.9131
1954	.9997	.9157	.9147
1955	.9996	.8657	.8637
1956	.9997	.8980	.8975
1957	.9997	.9135	.9118
1958	.9371	.8857	.9100
1959	.9997	.9175	.9184
1960	.9041	.8391	.9059
1950-1955	.9996	.9069	.9062
1956-1960	.9687	.8897	.9083
1958-1960	.9473	.8792	.9108
1950-1960	.9856	.8992	.9072

(Table 3 appears on page 330)

TABLE 4

Equation for Demand Deposits of Businesses with Alternative Constraints*

Time period	Statistic †	Regression I		Regression II	
		Value-added	Financial center	Permanent income	Financial center
1958-1960	b	.8027	.7074	1.2421	.3165
	t	16.997	3.1476	24.255	1.7893
1950-1960	b	.8147	.4195	1.2346	.1821
	t	34.326	4.1210	48.432	2.3602
1950-1955	b	.8003	.3460	1.2394	.1130
	t	25.025	2.7221	37.024	1.1839
1956-1960	b	.8124	.6166	1.2339	.2606
	t	22.431	3.7745	31.292	1.9958

* The variable, service charge as a percent of demand deposits, was held constant in regression.
† b: net regression coefficient. t: Student's t-statistic.

TABLE 3

Stability and Significance Tests: Regression for Demand Deposits of Individuals

a) Regression Equation: 1950-1960

Statistic	Independent Variables: Constant	Service charges as a percent of demand deposits	Interest rate on time deposits	Permanent income	Holding company banking (dummy)	Mutual savings banking (dummy)	Coefficient of determination
Net regression coefficient	.0045	— .2188	— .3389	1.1155	1.9215	—3.7997	.8485
t	.0199	—3.2403	—2.2040	44.749	2.9301	—6.9378	
Partial correlation coefficient		— .1404	— .0906	.8906	.1272	— .2906	

b) Stability Test:

Time period of regression	Sum of squared residuals
1950-1960	14,090.8
1950-1955	7,520.5
1956-1960	6,475.3

The calculated F statistic is .58 with 6 and 516 degrees of freedom. The tabular F is 2.12. The hypothesis that the pooled regression for the whole period differs from the two segments is rejected.

c) F Test: 1950-1960 Period and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	584.9	2.23	.8485
1950-1955	326.1	2.24	.8525
1956-1960	257.0	2.25	.8459
1958-1960	155.4	2.27	.8492
1950	53.5	2.41	.8642
1951	55.1	2.41	.8677
1952	55.8	2.41	.8692
1953	57.1	2.41	.8717
1954	56.6	2.41	.8708
1955	32.1	2.41	.7925
1956	37.8	2.41	.8182
1957	56.4	2.41	.8704
1958	48.9	2.41	.8535
1959	56.1	2.41	.8697
1960	42.2	2.41	.8341

The regression equation explains a significant proportion of the variation in the dependent variable in each time period tested.

TABLE 5

Stability and Significance Tests: Regressions for Demand Deposits of Business

a) Regression Equation: 1950-1960

Statistic	Independent Variables: Constant	Service charges as a percent of demand deposits	Value-added	Financial center	Coefficient of determination
Net regression coefficient	.0072	— .2084	.8147	.4195	.7985
t	.0248	—2.5122	34.326	4.1210	
Partial correlation coefficient		— .1091	.8320	.1772	

b) Stability Test:

Time period of regression	Sum of squared residuals
1950-1960	23,120.6
1950-1955	12,645.2
1956-1960	10,137.8

The calculated F statistic is 1.93 with 4 and 520 degrees of freedom. The tabular F is 2.39. The hypothesis that the pooled regression for the whole period differs from the two segments is rejected.

c) F Test: 1950-1960 and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	692.1	2.62	.7985
1950-1955	380.7	2.64	.8009
1956-1960	318.9	2.65	.8021
1958-1960	183.0	2.67	.7968
1950	62.8	2.80	.8107
1951	61.2	2.80	.8067
1952	57.1	2.80	.7958
1953	61.3	2.80	.8070
1954	64.0	2.80	.8136
1955	58.3	2.80	.7990
1956	61.4	2.80	.8072
1957	61.9	2.80	.8085
1958	65.8	2.80	.8177
1959	49.6	2.80	.7718
1960	59.7	2.80	.8029

TABLE 6

Stability and Significance Tests: Regressions for Demand Deposits of Farmers

a) Regression Equation: 1950-1960

Statistic	Independent Variables: Constant	Independent Variables: Net farm income	Coefficient of determination
Net regression coefficient	—.0010	1.3579	.8290
t	—.0032	50.497	

b) Stability Test:

Time period of regression	Sum of squared residuals
1950-1960	25,171.1
1950-1955	14,406.1
1956-1960	10,700.9

The calculated F statistic is .67 with 2 and 524 degrees of freedom. The tabular F is 3.02. The hypothesis that the pooled regression for the whole period differs from the two segments is rejected.

c) F Test: 1950-1960 and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	2,550.0	3.86	.8290
1950-1955	1,342.8	3.87	.8244
1956-1960	1,211.0	3.89	.8358
1958-1960	791.8	3.91	.8479
1950	344.5	4.05	.8822
1951	288.4	4.05	.8625
1952	254.3	4.05	.8468
1953	232.4	4.05	.8348
1954	233.5	4.05	.8354
1955	106.9	4.05	.6991
1956	193.7	4.05	.8081
1957	220.1	4.05	.8271
1958	283.3	4.05	.8603
1959	225.9	4.05	.8308
1960	267.2	4.05	.8531

The calculated F exceeds the tabular F for all subperiods. It is concluded that a significant proportion of the variation in the dependent variable is explained by the regression.

TABLE 7

Stability and Significance Tests: Regressions for Total Demand Deposits

a) Regression Equation: 1950-1960

Statistic	Independent Variables: Constant	Service charges as a percent of demand deposits	Permanent income	Financial center	Coefficient of determination
Net regression coefficient	.0004	— .3477	.9890	.0734	.9447
t	.0032	—10.095	71.275	1.7467	
Partial correlation coefficient		— .4035	.9521	.0761	

b) Stability Test:

Time period of regression	Sum of squared residuals
1950-1960	3933.9
1950-1955	2118.6
1956-1960	1779.9

The calculated F statistic is 1.17 with 4 and 520 degrees of freedom. The tabular F is 2.39. The hypothesis that the pooled regression for the whole period differs from the two subperiods is rejected.

c) F Test: 1950-1960 and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	2982.3	2.62	.9447
1950-1955	1660.5	2.64	.9461
1956-1960	1327.8	2.65	.9441
1958-1960	934.6	2.67	.9524
1950	322.7	2.80	.9565
1951	350.0	2.80	.9598
1952	327.1	2.80	.9571
1953	318.8	2.80	.9560
1954	320.5	2.80	.9562
1955	154.1	2.80	.9131
1956	140.9	2.80	.9057
1957	337.8	2.80	.9584
1958	244.6	2.80	.9434
1959	314.1	2.80	.9554
1960	342.8	2.80	.9590

The calculated F exceeds the tabular F for all subperiods. It is concluded that a significant proportion of the deviation in the dependent variable is explained by the regression.

TABLE 8

Stability and Significance Tests: Total Deposits

a) Regression Equation: 1950-1960

Statistic	Independent Variables: Constant	Service charges as a percent of demand deposits	Interest rate on time deposits	Permanent income	Financial center	Coefficient of determination
Net regression coefficient	—.0010	— .1684	.1931	1.0042	.1531	.9635
t	—.0103	—5.7864	2.9853	87.368	4.5391	
Partial correlation		— .2453	.1294	.9674	.1947	

b) Stability Test:

Time period of regression	Sum of squared residuals
1950-1960	2483.1
1950-1955	914.3
1956-1960	1521.4

The calculated F statistic is 2.02 with 5 and 518 degrees of freedom. The tabular F is 2.23. The hypothesis that the pooled regression for the whole period differs from the two subperiods is rejected.

c) F Test: 1950-1960 and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	3453.7	2.39	.9635
1950-1955	2824.4	2.40	.9756
1956-1960	1125.2	2.41	.9504
1958-1960	505.4	2.43	.9357
1950	486.8	2.56	.9784
1951	492.0	2.56	.9786
1952	469.0	2.56	.9776
1953	422.3	2.56	.9752
1954	400.9	2.56	.9739
1955	387.6	2.56	.9730
1956	422.4	2.56	.9752
1957	367.6	2.56	.9716
1958	220.6	2.56	.9535
1959	346.4	2.56	.9699
1960	88.0	2.56	.8912

The calculated F exceeds the tabular F for all subperiods. It is concluded that a significant proportion of the deviation in the dependent variable is explained by the regression.

TABLE 9
Stability and Significance Tests: Regressions for Time Deposits

a) Total-Time-Deposits Regression: 1950-1960

Statistic	Independent Variables: Constant	Interest rate on time deposits	Interest rate on near-bank deposits	Permanent income	Financial center	Coefficient of determination
Net regression coefficient	—.0048	.8970	—1.4300	1.0259	.1224	.8943
t	—.0297	8.4979	—7.8927	51.269	2.0424	
Partial correlation coefficient		.3483	— .3262	.9133	.0890	

b) Stability Test: Total Time Deposits

Time period of regression	Sum of squared residuals
1950-1960	7333.7
1950-1955	3935.2
1956-1960	3270.3

The calculated F statistic is 1.84 with 5 and 518 degrees of freedom. The tabular F is 2.23. The hypothesis that the pooled regression for the whole period differs from the two subperiods is rejected.

c) F Tests for the Total-Time-Deposits Regression: 1950-1960 and Subperiods

Time period	F (calculated)	F (tabular)	Coefficient of determination
1950-1960	1106.0	2.39	.8943
1950-1955	645.0	2.40	.9012
1956-1960	472.3	2.41	.8894
1958-1960	247.3	2.43	.8768
1950	121.8	2.56	.9189
1951	128.2	2.56	.9226
1952	114.3	2.56	.9140
1953	116.4	2.56	.9155
1954	56.0	2.56	.8389
1955	110.0	2.56	.9110
1956	120.6	2.56	.9182
1957	104.3	2.56	.9066
1958	56.1	2.56	.8393
1959	96.4	2.56	.8997
1960	107.2	2.56	.9088

The calculated F exceeds the tabular F for all subperiods. It is concluded that a significant proportion of the deviation in the dependent variable is explained by the regression.

d) Time-Deposits-of-Individuals Regression: 1957-1958

Statistic	Independent Variables: Constant	Permanent income	Coefficient of determination
Net regression coefficient	.0008	1.5877	.9022
t	.0002	14.247	

e) Time-Deposits-of-Businesses Regression: 1957-1958

Statistic	Independent Variables: Constant	Value-added	Coefficient of determination
Net regression coefficient	.0002	.7241	.3898
t	.00001	3.7845	

TABLE 10

Near-Bank-Deposits Regression: 1950-1960

Statistic	Independent Variables							Coefficient of determination
	Constant	Service charges as a percent of demand deposits	Interest rate on near-bank deposits	Permanent income	Advertising	Holding company banking (dummy)	Mutual savings banking (dummy)	
Net regression coefficient	—.0027	.0859	.1437	.9935	.4421	—1.6375	12.713	.9368
t	—.0172	1.8414	.7413	46.559	15.597	—3.4763	28.157	
Partial correlation coefficient		.0804	.0325	.8979	.5642	— .1506	.7768	

TABLE 11

Currency Regression: 1948-1952

Statistic	Independent Variables			Coefficient of determination
	Constant	Permanent income	Interest rate on near-bank deposits	
Net regression coefficient	— .0018	1.2229	— .9431	.9266
t	— .0007	21.470	—5.2633	
Partial correlation coefficient		.9545	— .6173	

The Value of the Deferred Call Privilege: A Comment

► DONALD R. FRASER and R. GERALD SAYLOR

In the March 1966 issue of this *Review*,[1] Frank C. Jen and James E. Wert took issue with the contention of Arleigh P. Hess and Willis J. Winn that investors should at all times value a deferred call privilege.[2] Rather, as Jen and Wert hypothesized:

> . . . investors will insist on the same yield for bonds with a deferred call privilege as on that for bonds otherwise comparable but with a nondeferred call privilege, whenever the coupon rate is low relative to the expected interest rate. Moreover, whenever the coupon rate is quite high relative to the expected interest rate, investors will accept for bonds with a deferred call privilege a yield lower than that for bonds otherwise comparable but with a nondeferred call privilege. Finally, whenever the coupon rate is quite high, the higher the coupon rate is, the greater is the difference in yield that investors will accept for a bond with a deferred call privilege.[3]

To test these hypotheses, Jen and Wert relied upon pairings of utility offerings in the years from 1960 to 1964 which met certain criteria.[4] From an analysis of

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[1] Frank C. Jen and James E. Wert, "The Value of the Deferred Call Privilege," *The National Banking Review*, 3, March 1966, pp. 369-378.

[2] Arleigh P. Hess, Jr., and Willis J. Winn, *The Value of the Call Privilege*, Philadelphia, Pennsylvania: The University of Pennsylvania, 1962, Chapter II.

[3] Jen and Wert, *op. cit.*, p. 372.

[4] These criteria were: "1. issues of $5 million

these data, they concluded: "The evidence supports our contentions." [5]

The purposes of this comment are twofold: (1) to present additional empirical evidence testing the Jen-Wert hypotheses; and (2) to draw inferences regarding the level and stability of investor's expected or "normal" rates of interest. If, as Jen and Wert contend, the yield differential between deferred and nondeferred issues increases as coupon rates rise relative to the expected rate of interest for the type of issue in question, then data from 1966, with its extraordinarily high coupon rates, should provide an ideal test.[6] We would thus expect that the yield differential should be quite large for the greater part of the year—considerably larger in fact than the differentials found by Jen and Wert for the 1960-1964 period when coupon rates were substantially lower.

Using the same criteria as that of Jen and Wert, we analyzed each of the publicly-offered utility issues in 1966.[7] Pairings were made and differentials in offering yield between the deferred and nondeferred issues were then computed. The analysis was limited to Aa issues, because of the small number of Aaa and A issues offered during the year. In all, 25 pairings of Aa issues were obtained.[8]

The pairings strongly support the hypothesis that the yield differential is large when coupon rates are high relative to the "normal" rate of interest. Twenty-one, or 84 percent of the pairings, exhibited lower yields for the deferred than for the nondeferred issues.[9] For the 42 Aa pairings obtained by Jen and Wert, 31 (or 74 percent) contained lower yields for the deferred than for the nondeferred issues. More important, as the table demonstrates, the amount of the yield differential found in the pairings of Jen and Wert were quite small relative to those found in the 1966 issues. For example, most of the observations in the 1960-1964 period contained yield differences varying between +.05 and −.05 basis points. In 1966, however, most of the observations contained yield differences which varied between −.16 and −.25 basis points. In the 1960-1964 period, only 41 percent of the pairings exhibited negative yield differentials of six or more basis points; in 1966, however, 76 percent of the observations contained negative yield differentials of this size. Finally, while in the 1960-1964 period only 11 percent of the observations contained yield differentials of 16 or more basis points, in 1966, 64 percent of the observations had yield differentials of

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or larger; 2. issues that were publicly offered; 3. a rating by Moody's at the time of offering of A, Aa, or Aaa; 4. no warrant or conversion privileges—all were term rather than serial; 5. a schedule of call premiums not very different from the customary call schedule." In addition, the paired bonds had to be offered within a two-week period. *Ibid.*, p. 372.

[5] *Ibid.*, p. 376.

[6] By hypothesizing that the expected rate is independent of the current rate, Jen and Wert assume that the expected rate is stable. They state, however, that slow adjustments in the expected rate, relative to the current rate, is not inconsistent with their hypothesis. This comment tests their sub-hypothesis.

[7] *Moody's Bond Survey*, January through December, 1966.

[8] Five Aaa and five A pairings were also obtained.

[9] For the Aaa and A issues, two (or 40 percent) and five (or 100 percent), respectively, exhibited lower yields for the deferred than for the nondeferred. The failure of the Aaa issues to confirm the hypothesis may, however, be linked to the fact that four out of the five pairings contained the American Telephone and Telegraph Company, or one of its subsidiaries or affiliates.

this size. It is thus clear that the 1966 data strikingly confirm the hypotheses advanced by Jen and Wert.

Another consideration of vital importance to the discussion of the value of deferred call privileges is that of expected interest rates. In order for a yield differential to emerge between deferred and nondeferred bonds, interest rates must be expected to fall sufficiently within the period of deferment so that the borrower can gain by refunding the high coupon issue. If investors have a notion of expected interest rates,[10] then the expected or normal interest rate should be approximated by the absence of a yield differential between deferred and nondeferred issues for "low" coupon rates. Jan and Wert plotted yield differentials against coupon rates for Aa issues for the years 1960-1964, and concluded that during this time span the call privilege became valueless at about 4.50 percent. Using 1966 data, we found that the yield at which the differential became zero was about 4.70. If observations from the latter half of 1965 are included,[11] the "normal" interest shifts downward to 4.66 percent.[12] These findings for 1965 and 1966 thus suggest: (1) the expected interest rate is relatively stable; and (2) the expected rate is a function of both past and current rates. The latter conclusion contrasts with Jen and Wert's hypothesis that the expected rate is independent of current interest rates.

TABLE
Distribution of Yield Differences
1960-1964 and 1966

Yield differential	Percent of observations 1960-1964	1966
Greater than +.26	0	0
+.16 to +.25	2	0
+.06 to +.15	0	8
−.05 to +.05	57	16
−.06 to −.15	30	12
−.16 to −.25	11	44
Greater than −.25	0	20
	100	100

Sources: Frank C. Jen and James E. West, "The Value of the Deferred Call Privilege," **The National Banking Review,** 3, March 1966, pp. 377-378; and **Moody's Bond Survey,** January through December, 1966.

[10] The concept of expected interest rates may entail, either a range within which interest rates are normally thought to fluctuate, or the probability that rates will decline enough to make it profitable for the borrower to refund a high-coupon issue. See, for example, W. T. Newlyn, *Theory of Money,* Oxford: The Clarendon Press, 1962, p. 58; and Jean A. Crockett, "Appendix A: A Technical Note on the Value of a Call Privilege," in Hess and Winn *op. cit.*

[11] Mid-1965 roughly dates the break in the stability of interest rates during the present economic upturn.

[12] Adding second-half 1965, increases our observations from 25 to 33. The fitted regression of yield differentials and coupon rates gives an R^2 of .26 for the 1966 data alone; but when the eight observations for 1965 are included, the R^2 increases to .47. The coefficient of correlation for both regressions is significant at the .05 level.

The Value of the Deferred Call Privilege: A Reply

► FRANK C. JEN and JAMES E. WERT

Fraser and Saylor attribute to us the statement that the expected interest rate is independent of the current rate. We acknowledge that the statement was made. However, it was advanced only as an assumption necessary for the interpretation of evidence collected to test our hypotheses, and not as a proposition thoroughly supported by empirical evidence. Indeed, we made sure that our hypotheses are true even if the assumption is wrong, as stated in this footnote:

> Another assumption consistent with our hypothesis is that investors' expected interest rate for the deferred period rises and falls with the level of yield, but not as fast. Because yield level correlates closely with the coupon rate, yield difference should, on the average, still appear only when coupon rates are high.[1]

The question Fraser and Saylor raised —whether the investors' expected interest rate is stable—is, however, the basic question in the money market. We observed that the coupon rate, where the yield difference equalled zero for grade Aa bonds, was 5 percent for 1956-1959, and 4.50 percent for 1960-1964.[2] Fraser and Saylor have further observed that the zero-differential coupon rate was 4.70 percent for 1965-1966. Thus, one can conclude that investors' expected interest rate does shift over time. Indeed, one can consider the expected interest rate as stable relative *to the wide fluctuation in offering yields* as Fraser and Saylor have proposed.[3] Such relative stability cannot, however, be interpreted as favoring Fraser and Saylor's second proposition that "the expected interest rate is a function of both past and current rates," because this proposition, though intuitively appealing, has not been rigorously tested by them. Indeed, upon thorough research, one should not be too surprised to find that such exogenous factors as monetary and fiscal policies affect the expectations more than the past interest rates.

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[1] Jen and Wert, "The Value of the Deferred Call Privilege," *The National Banking Review*, 3, March 1966, p. 373. Fraser and Saylor note this quotation in footnote 6.

[2] *Ibid.*, p. 373, footnote 25.

[3] The italicized phrase is our addition to Fraser and Saylor's proposition.

The Administration of the Discount Function—Another View

► BERNARD SHULL

The recent exchange between Lapkin and Pfouts and Monhollon and Parthemos in this *Review* raises an issue concerning uniformity of administration at the discount windows of the Federal Reserve System.[1] This note is intended to clarify the formulation of the issue. The substantive question of whether there have, in fact, been differences of any significance in discount administration among Districts is not considered.

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[1] David T. Lapkin and Ralph W. Pfouts, "The Administration of the Discount Function," *The National Banking Review*, 3, December 1965; Jimmie R. Monhollon and James Parthemos, "A Comment," and Lapkin and Pfouts, "Reply," 4, September 1966.

Lapkin and Pfouts have shown that during the period 1951-1959 there were significant differences among Districts in the amount borrowed at the discount window. They have also shown that these differences were not associated with the ratio of required-to-total reserves, a proxy for bank demand for credit from the Federal Reserve. They conclude that the failure to find a significant positive relationship supports a hypothesis suggested by the vagueness of the "General Principles" of Regulation A; that is, that "the differences in member bank borrowing between Districts can be accounted for in some measure by differences in the administration of the discount window." [2]

Monhollon and Parthemos have pre-

[2] Lapkin and Pfouts, "The Administration of the Discount Function," p. 180.

sented evidence, in data for the Fifth Federal Reserve District, indicating no apparent relationship between the ratio of required-to-total reserves and the amount borrowed. With administration of the discount window presumed to be uniform within one District, this finding suggests that the ratio of required-to-total reserves is not an adequate proxy for demand. More generally, they argue that ". . . the form of the demand for discounting is extremely complex and the Lapkin-Pfouts specification is probably not even a close approximation." [3]

Lapkin and Pfouts evidently believe that the hypothesis in question may be tested without explicitly introducing supply variables.[4] This view, however, obscures the significance of the supply function established by regulation and law, and which, it is argued here, does not necessarily restrict, in a proportionate way, the amount demanded by individual banks. That no particular significance is attached to the supply function is evident in the period chosen for testing the hypothesis: 1951-1959. The "key terms" of the regulation, ". . . not defined with precision . . . broad enough to permit (or even encourage) differing interpretations," [5] did not exist prior to 1955.[6]

That the terms of the "General Principles" are vague and imprecise, as stated by Lapkin and Pfouts, need not be disputed. It may also be agreed that well-known comments such as "the discount window is never wide open or tightly closed," [7] do not shed much light on the conditions affecting the costs (non-monetary as well as monetary) and availability of funds. The Federal Reserve has generally emphasized the support given to the so-called tradition against borrowing; and this support may be interpreted as influencing bank attitudes and, therefore, their demand for credit. As to the supply function, however, this much seems clear: credit extensions to banks with normally "high" demands for credit may, in some given but unidentified sets of circumstances, be considered "inappropriate" and, through "surveillance" discouraged; while credit extensions to banks with normally "low" demands for credit, in other sets of circumstances, may be considered quite "appropriate." It has been indicated that all requests for accommodation are, in general, *initially assumed* to be "appropriate." [8] Consequently, the explicit restrictions at the discount window would normally be on the frequency or continuity of indebtedness, with critical durations varying with the set of circumstances being considered. Over any extended period of time (for example, a year), the amount borrowed should not be independent of the conditions for "appropriate" borrowing; that is, supply.

It has been recognized that the circumstances under which credit may "appropriately" be extended at the discount window, are more likely to arise for unit banks than for extensive branch banking systems.[9] This observation may be gen-

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[3] Monhollon and Parthemos, *op. cit.*, p. 92.

[4] Lapkin and Pfouts, *op. cit.*, p. 185.

[5] *Ibid.*, p. 180.

[6] *Federal Reserve Bulletin*, January 1955, pp. 8, 9.

[7] Robert V. Roosa, "Credit Policy at the Discount Window: Comment," *Quarterly Journal of Economics*, 1959, p. 334.

[8] This seems a proper interpretation of the Monhollon-Parthemos statement that ". . . Reserve Bank administration seldom, if ever, involves any outright refusals of accommodations . . . ," p. 92; and also the same point made by Whittlesey and cited by Lapkin-Pfouts, "Reply," p. 94.

[9] See Edward C. Simmons, "Federal Reserve

TABLE 1

Correlation Coefficients Between Borrowing-to-Required Reserves for Reserve City Banks and Branch Banking, by District, 1963-1965

	Rank difference coefficients	Natural numbers	Logarithms
1963	—.664	—.568	—.702
1964	—.608	—.562	—.672
1965	—.767	—.569	—.688
1963-1965	—.720	—.624	—.740

Note: In each case, the ratio of borrowing-to-required reserves for the period indicated was related to the 1963-1965 average ratio of commercial banking offices-to-commercial banks. With 12 observations, a rank correlation coefficient of about .59 is significant at the 5 percent level, and .75 at the 1 percent level. With 10 degrees of freedom, a product moment coefficient of .497 is significant at the 10 percent level, .576 is significant at the 5 percent level, and .708 is significant at the 1 percent level.

eralized to a degree. It is a well-known proposition that the stability of a bank's deposits depends, among other things, upon the extent of geographic and functional diversification of depositors.[10] It is also well-known that branch banking permits a greater diversification of deposit ownership than does unit banking. In a system where deposit fluctuations (arising out of emergencies, seasonal fluctuations in economic activity, and the variety of factors that result in very short-term movements of funds at the end of reserve periods) are "appropriate" reasons for borrowing, one would expect less borrowing under branch than under unit banking.[11]

This analysis might well be difficult to support empirically. The hypothesis, that bank structure and deposit variability affect the supply of credit, suggests tests involving the use of individual bank data, which are not readily available, as well as recognition of the potential importance of a number of variables. A crude test was made, however, by relating the aggregate ratios of borrowing-to-required reserves for Reserve City banks in each District, to a variable reflecting the extent of branch banking in each District (the ratio of commercial banking offices-to-commercial banks) for the years 1963 to 1965.[12] Correlation coefficients are presented in Table I. Although little credence can be given to the size of the coefficients, it can be seen that the relationships may reasonably be accepted as significantly different from zero in the direction expected.

The relationship between branch banking and amount borrowed suggests one, but not necessarily the only, reason why a simple positive relationship between an operational measure of "aggressiveness," such as the ratio of required-to-total reserves, and borrowing was not likely to be found by Lapkin and Pfouts. Branch banks typically hold lower proportions of liquid assets (including excess reserves) than do unit banks, presumably because they find it feasible to do so in view of their greater opportunity for portfolio diversification and greater deposit stability.

The applicability of these results to the

Discount-Rate Policy and Member-Bank Borrowing, 1944-1950," *Journal of Business*, January 1952, pp. 20-21; and Simmons, "A Note on the Revival of Federal Reserve Discount Policy," *Journal of Finance*, December 1956, pp. 414-416.

[10] Lyle E. Gramley, "Deposit Instability at Individual Banks," in *Essays on Commercial Banking*, Federal Reserve Bank of Kansas City, 1962, p. 43.

[11] It should also be noted that, other things being equal, variability in deposits and loan demand should influence the demand for borrowed funds as well as their supply, but in the same direction.

[12] Reserve City banks may be considered a relatively homogenous group with roughly similar motivations and attitudes toward branching and borrowing; and a group whose willingness to borrow would not preclude an effective demand for credit within the range of relevant market rates.

TABLE 2

Ratios of Borrowing-to-Required Reserves
Reserve City Banks

Years	Districts											
	Boston	N. York	Phila.	Cleve.	Rich.	Atlanta	Chicago	St. Louis	Mpls.	K. City	Dallas	S. F.
1963	.86	1.47	.65	1.29	2.25	2.28	2.29	1.57	1.60	3.95	2.05	.52
1964	1.12	1.04	.62	.68	1.80	3.77	3.67	1.28	2.19	2.61	3.56	.79
1965	2.39	2.35	1.38	1.04	2.90	4.48	4.48	3.16	5.76	7.38	3.28	1.45
1963-1965	1.46	1.62	.88	1.00	2.32	3.51	3.48	2.00	3.18	4.65	2.96	.92

Source: *Deposits, Reserves, and Borrowing*, J–1, Board of Governors, Federal Reserve System.

TABLE 3

Ratios of Commercial Banking Offices-to-Commercial Banks

Years	Districts											
	Boston	N. York	Phila.	Cleve.	Rich.	Atlanta	Chicago	St. Louis	Mpls.	K. City	Dallas	S. F.
1951	1.74	2.14	1.20	1.29	1.56	1.19	1.25	1.10	1.09	1.01	1.06	3.00
1955	2.05	2.65	1.45	1.52	1.77	1.25	1.31	1.14	1.09	1.02	1.08	5.00
1959	2.63	3.82	1.92	1.90	2.13	1.35	1.41	1.20	1.10	1.04	1.12	7.28
1963	3.35	5.17	2.44	2.34	2.87	1.48	1.53	1.31	1.13	1.09	1.16	9.04
1964	3.59	5.65	2.64	2.50	3.11	1.51	1.57	1.33	1.13	1.10	1.17	8.80
1965	3.88	6.04	2.84	2.67	3.32	1.54	1.63	1.37	1.14	1.10	1.18	8.74
Averages												
1951, 1955, 1959	2.14	2.87	1.52	1.57	1.82	1.26	1.32	1.15	1.09	1.02	1.09	5.36
1963-1965	3.61	5.62	2.64	2.50	3.10	1.51	1.58	1.34	1.13	1.10	1.17	8.86

Source: *Federal Reserve Bulletin*, August 1951, 1955, 1959, 1963, 1964 and 1965.

reserve bank rankings by District, shown in Table 5 of the original Lapkin-Pfouts article, may be tested.[13] An average ratio of commercial banking offices-to-commercial banks, for the period of 1951-1959, was related to the rankings for "borrowing" and "aggressiveness." Rank difference coefficients were, respectively, $-.701$, and $+.696$, both of which are significant at the 5 percent level. The failure of Lapkin and Pfouts to find a significant association between "aggressiveness" and "borrowing" is at least partly due to their failure to consider bank structure. A multiple regression approach, using the Lapkin-Pfouts proxy for demand and a branch banking variable, would probably yield a better explanation of differences in borrowing; but, if for no other reason than incompleteness of the supply function, the significance of the results would still be ambiguous.

In light of the analysis, the Monhollon-Parthemos comment is also inconclusive. Their suggestion that the supply function is perfectly elastic[14] disregards the fact that specific constraints exist. Even if banks have learned not to apply for credit for "inappropriate" purposes, it is presumably because of the nonmonetary costs imposed by the administrative process. This is most clearly the case when banks borrow from lenders other than the Federal Reserve at rates higher than the discount rate. That they find no correla-

[13] Lapkin and Pfouts, *op. cit.*, p. 186.

[14] Monhollon and Parthemos, *op. cit.*, p. 92.

tion between the proxy for demand and the amount borrowed within the Fifth District may be because the proxy is inadequate, as they state, *or* because a particular form of rationing has taken place, such as that suggested above.

The analysis presented here does not throw any new light on the substantive question of whether the amount of credit extended has been affected by differences in administration, and, if so, to what extent. It does indicate that the issue of nonuniformity cannot be simply approached through the demand for borrowed funds (as suggested by Lapkin-Pfouts), no matter how well specified (as implied by Monhollon-Parthemos). To reveal the impact of administration, a supply function must also be specified, and intrinsic properties must be distinguished from the discriminatory effects postulated.

A Test of Money Market Conditions as a Means of Short-Run Monetary Management: A Comment

►KEITH M. CARLSON

The use of money market pressure as a guide in the formulation and implementation of monetary policy is criticized by Messrs. Andersen and Levine in the September 1966 issue of this *Review*.[1] They summarize (or rather, formulate from Federal Reserve sources) the money market condition theory of monetary management, and ingeniously derive quantitative indexes of money market pressure by means of factor analysis. Regression analysis is then used to examine the relationship between several intermediate guides of Federal Reserve policy (such as, bank credit, money, reserves) and the constructed indexes of money market pressure. The regression analysis is meant to be a test of the following hypothesis:

> A change in money market conditions, usually expressed in terms of the degree of pressure in the money market, induced by Federal Reserve actions has a predictable effect on short-run changes in money, bank credit and long-term interest rates.[2]

In developing a test of this hypothesis, Andersen and Levine introduce a measure of money market pressure that reflects approximately the intentions of

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[1] Leonall C. Andersen and Jules M. Levine, "A Test of Money Market Conditions As A Means of Short-Run Monetary Management," *The National Banking Review*, 4, September 1966, pp. 41-51.

[2] *Ibid.*, p. 41.

Federal Reserve policymakers during the period January 1960 to March 1965. They tested the effect of changes in money market pressure (as measured by the constructed indexes) on the intermediate guides, and concluded that "The results of the regression analysis lead to the rejection of the hypothesis tested."[3]

The point of this commentary is that the test is not consistent with the hypothesis. The statement of the hypothesis in the opening paragraph of the Andersen-Levine paper is unclear with regard to the *ceteris paribus* assumption. It is, however, clarified later in the article, where the essence of the Federal Reserve theory is stated as follows:

> . . . increased pressure in the money market, *other factors remaining unchanged* [italics added], indicates a set of events which tends to reduce the rate of growth of money and bank credit and to increase long-term interest rates.[4]

Although this statement indicates that the hypothesis is meant to be in partial-equilibrium terms, the test of the hypothesis (that is, the regression analysis) is *not* conducted in these terms.

The authors make no attempt to delineate these "other factors" or to justify their omission in the regression analysis of intermediate guides on indexes of money market pressure.[5] Yet, surprisingly, without conducting the test in partial-equilibrium terms, they conclude that the hypothesis is rejected because factors other than money market pressure explain most of the variation in the intermediate guides. This is *not* the hypothesis; it is, rather, *other factors remaining unchanged*, changing pressures in the money market affect rates of growth of money, bank credit, reserves, and the like.

What hypothesis would be consistent with the Andersen and Levine test? An obvious candidate would be the following:

> Most of the variation in intermediate guides is explained by changes in money market pressure.

But such a hypothesis is essentially irrelevant in an analysis of short-run monetary management.[6] It is not the ability to control most of the variation in a target variable that matters, but rather the ability to control at least one variable (and forecast the others) so as to close any discrepancy between an actual and a desired rate of change (or level) in that target variable.[7] The "importance" of a component variable is not necessarily measured by its contribution to the variation in the total (or target) variable.[8]

Despite the unacceptability of the authors' general conclusion, the development of a measure of money market pres-

[3] *Ibid.*, p. 50.

[4] *Ibid.*, p. 45.

[5] There are several monetary models in the literature which specify factors influencing the intermediate guides of monetary policy. See, for example, William G. Dewald, "Free Reserves, Total Reserves, and Monetary Control," *Journal of Political Economy*, LXXI, April 1963, pp. 141-153.

[6] Not only is such a hypothesis irrelevant, but it is doomed to be rejected because of the interdependence of the intermediate guides. Control of the money supply, for example, might indicate loss of control of interest rates, and conversely. See "1963—A Year of Moderate Expansion," *Review*, Federal Reserve Bank of St. Louis, 46, January 1964.

[7] This point is akin to the "Tobin result" cited in Paul Samuelson, "Reflections on Central Banking," *The National Banking Review*, 1, September 1963, pp. 18-19. For example, in order for the central bank to control total liquidity—consisting of money, bonds, insurance assets, and the like—it needs to have control of only one, say money.

[8] Consider the following example: The hypothesis is that changes in government expenditures (G) determine growth in gross national product (Y). Suppose that all of the variation in Y in the absence of G is explained by variation in investment (I), but all of these variations are offset by changes in G. To test

sure should be a useful contribution to the analysis of Federal Reserve policy. Such a measure could be part of a more general structural model incorporating those "other factors" omitted by Andersen and Levine.

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the hypothesis, one would not look at the correlation between G and Y. If anything, the correlation between G and I would be relevant. But even this correlation would not constitute a proper test if the target variable itself were shifting. For further discussion, see John Kareken and Robert M. Solow, "Lags in Monetary Policy," *Stabilization Policies*, A Series of Research Studies Prepared for the Commission on Money and Credit, Prentice-Hall, 1963, p. 16.

Selected Statistical Data

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TABLE 1

Number of national banks and banking offices, by states, December 31, 1966

	National banks			Number of branches	Number of offices
	Total	Unit	With branches		
United States	4,799	3,397	1,402	9,405	14,204
Alabama	87	55	32	137	224
Alaska	5	0	5	42	47
Arizona	4	1	3	182	186
Arkansas	67	39	28	62	129
California	91	46	45	1,791	1,882
Colorado	117	117	0	0	117
Connecticut	30	9	21	179	209
Delaware	5	3	2	4	9
District of Columbia	9	1	8	53	62
Florida	198	198	0	0	198
Georgia	58	33	25	127	185
Hawaii	2	0	2	41	43
Idaho	9	3	6	101	110
Illinois	422	422	0	0	422
Indiana	123	59	64	267	390
Iowa	102	67	35	38	140
Kansas	170	145	25	25	195
Kentucky	80	39	41	120	200
Louisiana	47	15	32	145	192
Maine	21	6	15	71	92
Maryland	49	21	28	196	245
Massachusetts	90	24	66	351	441
Michigan	99	34	65	459	558
Minnesota	194	192	2	6	200
Mississippi	36	9	27	96	132
Missouri	98	79	19	19	117
Montana	49	49	0	0	49
Nebraska	126	108	18	18	144
Nevada	3	1	2	36	39
New Hampshire	52	32	20	26	78
New Jersey	148	45	103	459	607
New Mexico	34	15	19	54	88
New York	190	94	96	1,015	1,205
North Carolina	27	7	20	275	302
North Dakota	42	34	8	8	50
Ohio	226	93	133	570	796
Oklahoma	220	193	27	27	247
Oregon	13	8	5	217	230
Pennsylvania	354	201	153	840	1,194
Rhode Island	4	0	4	54	58
South Carolina	26	5	21	191	217
South Dakota	34	25	9	42	76
Tennessee	77	24	53	226	303
Texas	546	546	0	0	546
Utah	13	9	4	55	68
Vermont	27	14	13	33	60
Virginia	114	43	71	369	483
Washington	28	14	14	351	379
West Virginia	80	80	0	0	80
Wisconsin	112	100	12	24	136
Wyoming	40	40	0	0	40
Virgin Islands	1	0	1	3	4
D.C.—all *	14	1	13	89	103

* Includes national and nonnational banks in the District of Columbia, which are supervised by the Comptroller of the Currency.

TABLE 2

Status of applications for national bank charters, and charters issued, calendar 1966

Applications carried over from 1965	27
2 Conversions	
25 Primary	
Applications received 1966	99
33 Conversions	
66 Primary	
	126
Applications approved 1966	51
23 Conversions	
28 Primary	
Applications rejected 1966	45
6 Conversions	
39 Primary	
Applications abandoned 1966	6
2 Conversions	
4 Primary	
Applications pending, December 31, 1966	24
4 Conversions	
20 Primary	126
* * *	
National banks chartered 1966	49
25 Conversions	
24 Primary	

TABLE 3

Status of applications for national bank charters* and charters issued,* by states, calendar 1966

	Received †	Approved	Rejected	Abandoned	Pending Dec. 31, 1966	Charters issued
United States	91	28	39	4	20	24
Alabama	1	0	1	0	0	1
Alaska	0	0	0	0	0	0
Arizona	0	0	0	0	0	0
Arkansas	1	0	1	0	0	2
California	1	1	0	0	0	1
Colorado	3	2	1	0	0	1
Connecticut	2	0	2	0	0	0
Delaware	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0
Florida	17	5	8	0	4	2
Georgia	6	1	2	0	3	0
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	3	2	0	0	1	1
Indiana	0	0	0	0	0	0
Iowa	1	0	1	0	0	0
Kansas	2	2	0	0	0	0
Kentucky	0	0	0	0	0	0
Louisiana	2	1	1	0	0	0
Maine	0	0	0	0	0	0
Maryland	2	0	0	2	0	0
Massachusetts	1	0	0	0	1	0
Michigan	4	1	2	0	1	1
Minnesota	2	0	0	1	1	0
Mississippi	2	0	2	0	0	1
Missouri	1	1	0	0	0	2
Montana	0	0	0	0	0	0
Nebraska	1	0	1	0	0	0
Nevada	0	0	0	0	0	0
New Hampshire	1	0	0	0	1	1
New Jersey	3	1	1	0	1	0
New Mexico	1	0	1	0	0	0
New York	5	3	1	1	0	1
North Carolina	1	0	1	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	2	1	0	0	1	1
Oklahoma	0	0	0	0	0	0
Oregon	1	0	1	0	0	1
Pennsylvania	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	1	1	0	0	0	0
South Dakota	0	0	0	0	0	0
Tennessee	0	0	0	0	0	1
Texas	10	1	7	0	2	3
Utah	0	0	0	0	0	0
Vermont	0	0	0	0	0	0
Virginia	1	0	0	0	1	1
Washington	3	0	1	0	2	0
West Virginia	0	0	0	0	0	1
Wisconsin	7	5	2	0	0	2
Wyoming	1	0	1	0	0	0
Puerto Rico	1	0	0	0	1	0
Guam	1	0	1	0	0	0

* Excludes conversions.

† Includes 25 applications pending as of December 31, 1965.

TABLE 4

Status of applications for conversion to national bank charters, and charters issued, by states, calendar 1966

	Received *	Approved	Rejected	Abandoned	Pending Dec. 31, 1966	Charters issued
United States	35	23	6	2	4	25
Alabama	0	0	0	0	0	0
Alaska	0	0	0	0	0	0
Arizona	0	0	0	0	0	0
Arkansas	0	0	0	0	0	0
California	0	0	0	0	0	0
Colorado	1	0	0	0	1	0
Connecticut	1	1	0	0	0	1
Delaware	0	0	0	0	0	0
District of Columbia	1	1	0	0	0	1
Florida	3	1	2	0	0	2
Georgia	1	1	0	0	0	2
Hawaii	0	0	0	0	0	0
Idaho	0	0	0	0	0	0
Illinois	6	6	0	0	0	5
Indiana	3	2	0	0	1	1
Iowa	1	0	1	0	0	1
Kansas	0	0	0	0	0	0
Kentucky	0	0	0	0	0	0
Louisiana	0	0	0	0	0	0
Maine	0	0	0	0	0	0
Maryland	0	0	0	0	0	0
Massachusetts	0	0	0	0	0	0
Michigan	1	1	0	0	0	1
Minnesota	1	1	0	0	0	1
Mississippi	0	0	0	0	0	0
Missouri	1	1	0	0	0	0
Montana	0	0	0	0	0	0
Nebraska	1	0	0	0	1	0
Nevada	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0
New Jersey	2	2	0	0	0	3
New Mexico	0	0	0	0	0	0
New York	0	0	0	0	0	0
North Carolina	0	0	0	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	6	2	2	1	1	3
Oklahoma	0	0	0	0	0	0
Oregon	0	0	0	0	0	0
Pennsylvania	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	1	1	0	0	0	1
South Dakota	1	1	0	0	0	1
Tennessee	0	0	0	0	0	0
Texas	0	0	0	0	0	0
Utah	0	0	0	0	0	0
Vermont	0	0	0	0	0	0
Virginia	3	2	0	1	0	2
Washington	0	0	0	0	0	0
West Virginia	0	0	0	0	0	0
Wisconsin	1	0	1	0	0	0
Wyoming	0	0	0	0	0	0

* Includes two applications pending as of December 31, 1965.

TABLE 5

Status of de novo branch applications of national banks, by states, October 1-December 31, 1966

	Received *	Approved	Rejected	Abandoned	Pending Dec. 31, 1966
United States	417	106	34	14	263
Alabama	2	1	0	0	1
Alaska	0	0	0	0	0
Arizona	10	3	1	0	6
Arkansas	3	2	0	0	1
California	64	11	11	2	40
Colorado	0	0	0	0	0
Connecticut	6	4	1	0	1
Delaware	0	0	0	0	0
District of Columbia	1	0	0	0	1
Florida	0	0	0	0	0
Georgia	6	4	0	0	2
Hawaii	0	0	0	0	0
Idaho	2	0	0	0	2
Illinois	3	0	0	0	3
Indiana	11	3	2	0	6
Iowa	1	1	0	0	0
Kansas	1	0	0	0	1
Kentucky	5	1	0	0	4
Louisiana	1	1	0	0	0
Maine	5	1	1	0	3
Maryland	18	3	2	1	12
Massachusetts	12	5	0	0	7
Michigan	27	6	2	3	16
Minnesota	0	0	0	0	0
Mississippi	8	4	0	0	4
Missouri	0	0	0	0	0
Montana	0	0	0	0	0
Nebraska	0	0	0	0	0
Nevada	1	0	0	0	1
New Hampshire	9	2	1	0	6
New Jersey	16	10	1	0	5
New Mexico	0	0	0	0	0
New York	40	14	5	3	18
North Carolina	11	4	0	2	5
North Dakota	3	1	0	0	2
Ohio	18	4	1	0	13
Oklahoma	2	0	0	0	2
Oregon	5	2	0	1	2
Pennsylvania	30	9	4	1	16
Rhode Island	0	0	0	0	0
South Carolina	10	4	2	1	3
South Dakota	1	0	0	0	1
Tennessee	2	1	0	0	1
Texas	0	0	0	0	0
Utah	3	0	0	0	3
Vermont	2	2	0	0	0
Virginia	10	3	0	0	7
Washington	7	0	0	0	7
West Virginia	0	0	0	0	0
Wisconsin	61	0	0	0	61
Wyoming	0	0	0	0	0
Virgin Islands	0	0	0	0	0
D.C.—all †	1	0	0	0	1

* Includes 238 applications pending as of September 30, 1966.

† Includes national and nonnational banks in the District of Columbia, which are supervised by the Comptroller of the Currency.

TABLE 6

Status of de novo branch applications of national banks, by states, calendar 1966

	Received *	Approved	Rejected	Abandoned	Pending Dec. 31, 1966
United States	1,072	626	140	43	263
Alabama	23	21	1	0	1
Alaska	1	1	0	0	0
Arizona	17	10	1	0	6
Arkansas	7	4	2	0	1
California	196	101	49	6	40
Colorado	0	0	0	0	0
Connecticut	19	16	2	0	1
Delaware	0	0	0	0	0
District of Columbia	5	2	0	2	1
Florida	0	0	0	0	0
Georgia	15	13	0	0	2
Hawaii	1	1	0	0	0
Idaho	3	0	0	1	2
Illinois	3	0	0	0	3
Indiana	30	20	4	0	6
Iowa	7	6	1	0	0
Kansas	3	1	0	1	1
Kentucky	9	5	0	0	4
Louisiana	11	10	1	0	0
Maine	9	4	2	0	3
Maryland	41	16	12	1	12
Massachusetts	32	25	0	0	7
Michigan	65	38	4	7	16
Minnesota	0	0	0	0	0
Mississippi	27	20	1	2	4
Missouri	3	2	0	1	0
Montana	0	0	0	0	0
Nebraska	3	3	0	0	0
Nevada	2	1	0	0	1
New Hampshire	16	6	1	3	6
New Jersey	49	40	3	1	5
New Mexico	5	5	0	0	0
New York	109	58	27	6	18
North Carolina	31	22	0	4	5
North Dakota	5	3	0	0	2
Ohio	56	37	5	1	13
Oklahoma	2	0	0	0	2
Oregon	9	6	0	1	2
Pennsylvania	83	50	14	3	16
Rhode Island	2	2	0	0	0
South Carolina	29	20	4	2	3
South Dakota	1	0	0	0	1
Tennessee	18	16	1	0	1
Texas	0	0	0	0	0
Utah	4	1	0	0	3
Vermont	5	5	0	0	0
Virginia	26	13	5	1	7
Washington	26	19	0	0	7
West Virginia	0	0	0	0	0
Wisconsin	62	1	0	0	61
Wyoming	0	0	0	0	0
Virgin Islands	2	2	0	0	0
D.C.—all †	9	6	0	2	1

* Includes 212 applications pending as of December 31, 1965.

† Includes national and nonnational banks in the District of Columbia, which are supervised by the Comptroller of the Currency.

TABLE 7

Branches of national banks: in operation September 30, 1966; opened, discontinued, or consolidated, October 1-December 31, 1966; and branches in operation December 31, 1966

	Branches in operation Sept. 30, 1966	De novo branches opened for business Oct. 1-Dec. 31, 1966	Branches acquired through merger or conversion Oct. 1-Dec. 31, 1966	Existing branches discontinued or consolidated Oct. 1-Dec. 31, 1966	Branches in operation Dec. 31, 1966
United States	9,221[r]	162	31	9	9,405
Alabama	134	3	0	0	137
Alaska	40	2	0	0	42
Arizona	178	4	0	0	182
Arkansas	61	2	0	1	62
California	1,773	20	0	2	1,791
Colorado	0	0	0	0	0
Connecticut	177	3	0	1	179
Delaware	4	0	0	0	4
District of Columbia	53	0	0	0	53
Florida	0	0	0	0	0
Georgia	124	3	0	0	127
Hawaii	40	1	0	0	41
Idaho	99	2	0	0	101
Illinois	0	0	0	0	0
Indiana	263	3	1	0	267
Iowa	38	1	0	1	38
Kansas	24	1	0	0	25
Kentucky	120	0	0	0	120
Louisiana	141	4	0	0	145
Maine	71	0	0	0	71
Maryland	195	1	0	0	196
Massachusetts	346	5	0	0	351
Michigan	450	8	1	0	459
Minnesota	6	0	0	0	6
Mississippi	93	3	0	0	96
Missouri	18	1	0	0	19
Montana	0	0	0	0	0
Nebraska	17	1	0	0	18
Nevada	35	1	0	0	36
New Hampshire	25	1	0	0	26
New Jersey	450[r]	5	4	0	459
New Mexico	54	0	0	0	54
New York	986	27	2	0	1,015
North Carolina	273	2	2	2	275
North Dakota	7	1	0	0	8
Ohio	548	12	10	0	570
Oklahoma	26	1	0	0	27
Oregon	215	2	0	0	217
Pennsylvania	824	10	6	0	840
Rhode Island	53	1	0	0	54
South Carolina	182	8	1	0	191
South Dakota	40	2	0	0	42
Tennessee	219	7	0	0	226
Texas	0	0	0	0	0
Utah	55	0	0	0	55
Vermont	31	2	0	0	33
Virginia	363	6	2	2	369
Washington	343	6	2	0	351
West Virginia	0	0	0	0	0
Wisconsin	24	0	0	0	24
Wyoming	0	0	0	0	0
Virgin Islands	3	0	0	0	3
D.C.—all *	89	0	0	0	89

* Includes national and nonnational banks in the District of Columbia, which are supervised by the Comptroller of the Currency.

r = revised.

TABLE 8

Branches of national banks: in operation December 31, 1965; opened, discontinued, or consolidated, calendar 1966; and branches in operation December 31, 1966

	Branches in operation Dec. 31, 1965	De novo branches opened for business Jan. 1-Dec. 31, 1966	Branches acquired through merger or conversion Jan. 1-Dec. 31, 1966	Existing branches discontinued or consolidated Jan. 1-Dec. 31, 1966	Branches in operation Dec. 31, 1966
United States	8,758r	549	146	48	9,405
Alabama	123	13	1	0	137
Alaska	40	2	0	0	42
Arizona	173	9	0	0	182
Arkansas	57	6	0	1	62
California	1,742	61	1	13	1,791
Colorado	0	0	0	0	0
Connecticut	167	12	1	1	179
Delaware	4	0	0	0	4
District of Columbia	47	1	5	0	53
Florida	0	0	0	0	0
Georgia	120	7	0	0	127
Hawaii	40	1	1	1	41
Idaho	94	7	0	0	101
Illinois	0	0	0	0	0
Indiana	254	13	1	1	267
Iowa	28	10	1	1	38
Kansas	23	2	0	0	25
Kentucky	118	3	0	1	120
Louisiana	130	15	0	0	145
Maine	69	2	0	0	71
Maryland	186	11	0	1	196
Massachusetts	319	29	3	0	351
Michigan	397	38	24	0	459
Minnesota	6	0	0	0	6
Mississippi	64	17	15	0	96
Missouri	18	1	0	0	19
Montana	0	0	0	0	0
Nebraska	17	1	0	0	18
Nevada	32	4	0	0	36
New Hampshire	22	4	0	0	26
New Jersey	419	25	17	2	459
New Mexico	52	2	0	0	54
New York	956r	67	3	11	1,015
North Carolina	261	14	3	3	275
North Dakota	5	3	0	0	8
Ohio	515	34	21	0	570
Oklahoma	25	3	0	1	27
Oregon	209	8	0	0	217
Pennsylvania	783	45	17	5	840
Rhode Island	53	1	0	0	54
South Carolina	176	14	1	0	191
South Dakota	37	3	2	0	42
Tennessee	200	25	1	0	226
Texas	0	0	0	0	0
Utah	55	1	0	1	55
Vermont	31	4	0	2	33
Virginia	325	23	24	3	369
Washington	340	7	4	0	351
West Virginia	0	0	0	0	0
Wisconsin	24	0	0	0	24
Wyoming	0	0	0	0	0
Virgin Islands	2	1	0	0	3
D.C.—all *	82	6	1	0	89

* Includes national and nonnational banks in the District of Columbia, which are supervised by the Comptroller of the Currency.

r = revised.

TABLE 9

De novo branches of national banks opened for business, by community size and by size of bank, October 1-December 31, 1966, and calendar 1966

Category	October 1-December 31, 1966	1966
In cities with population:		
Less than 5,000	41	152
5,000 to 24,999	49	177
25,000 to 49,999	15	59
50,000 to 99,999	18	52
100,000 to 249,999	12	40
250,000 to 499,999	13	28
500,000 to 1,000,000	5	14
Over 1,000,000	9	27
TOTAL	162	549
By banks with total resources: (in millions of dollars)		
Less than $ 10.0	27	109
10.0 to 24.9	28	111
25.0 to 49.9	9	50
50.0 to 99.9	13	46
100.0 to 999.9	56	148
Over 1,000	29	85
TOTAL	162	549

TABLE 10

Mergers,* October 1-December 31, 1966, and calendar 1966

Applications carried over from:			
September 30, 1966	26	1965	7
Applications received:			
October 1-December 31, 1966	20	1966	101
Disposition of applications:			
October 1-December 31, 1966		1966	
Approved	30		85
Disapproved	1		3
Withdrawn	1		6
Applications pending:			
December 31, 1966	14		14
Transactions completed:			
October 1-December 31, 1966		1966	
Mergers	19		58
Consolidations	1		4
Purchase of assets	3		11
TOTAL	23		73

The aggregate totals of capital stock and capital accounts for the certificates issued are as follows:

	Charter or purchasing banks	Merging, consol., or selling banks	Combined
Capital stock (Oct. 1-Dec. 31, 1966)	$ 85,907,517	$ 4,737,100	$ 90,189,157
Capital accounts (Oct. 1-Dec. 31, 1966)	332,615,525	17,265,231	341,043,377
Capital stock (1966)	239,687,102	19,765,090	262,052,954
Capital accounts (1966)	910,465,025	66,723,331	957,635,990

* Includes mergers, consolidations and purchase and sale transactions, where the resulting bank is a national bank.

BOOK REVIEWS

Biddle's Bank: The Crucial Years. By Jean Alexander Wilburn. New York and London: Columbia University Press, 1967. Pp. 149. $6.50.

The Bank War between Jackson and Biddle remains one of the most discussed topics in American political and economic history. In this slender volume a new interpretation of the controversy is proposed. With a decidedly pro-Biddle bias, Mrs. Wilburn argues that the Bank was backed by the great majority of the people, particularly in the South and West, and that contrary to the opinion of almost all previous writers, the state banks were also strong supporters. Thus, Mrs. Wilburn claims that earlier histories, pro-Bank and pro-Jackson, have both overstated and misstated the opposition to recharter.

However, since the text is only 135 pages long, details of the contemporary background and analysis of historical writings on the conflict are for the most part omitted. The author's criticisms occasionally seem aimed at a straw man, created by adding together the rather exhaustive lists of opponents described in the interpretative studies. This oversimplifies these histories considerably, and in her counterattack, Mrs. Wilburn ends up with another straw man—that except for a greedy (or misguided), well-organized group of Jacksonian politicians, the entire country favored the bank. Although Mrs. Wilburn starts by asking how, if the others were correct, the War could have continued so long, at the end one is left wondering how such a small group of people, in an election year, could thwart an overwhelming national will. Much of the flavor of a major conflict between differing interest groups, as well as different economic and political philosophies, is missing. Nevertheless, the possibility of revisions in attitudes toward the Bank after it passed its early crisis years is carefully presented. Though it has been raised elsewhere, the current emphasis is justified. Whether the observed shift in Southern and Western sentiments was due to comprehension of how the Bank worked to help them and the nation, or whether it reflected the attitudes of an expansionary period of credit ease, particularly in those regions, remains unanswered.

The discussion is restricted to 1831 and 1832. Mrs. Wilburn uses four sources of evidence to support her thesis. First, the 1832 Senate and House votes on recharter, supplemented by a House vote on a similar issue in 1834, are analyzed. Second, a series of votes in the New York State legislature in 1831, 1832, and 1834 on recharter are examined. Third, there is presented a brief summary of discussions in other state legislatures concerning the Bank. Mrs. Wilburn is aware of the problems of using votes on controversial party matters to establish pro or con sentiment on specific issues, but is willing to accept this evidence. She explains some of the 1832 Senate anti-Bank votes as nonrepresentative of feelings toward the Bank, based upon reaction to Van Buren's failure to be confirmed as Minister to Great Britain. She then argues that all pro-Bank votes reflected pro-Bank sentiments. Perhaps this is true, but these issues are sufficiently complex to require more detailed presentations.

The fourth, and most emphasized, set of evidence comes from the memorials written by citizens and state banks to Congress. The great majority favored recharter. All of the approximately seventy-odd memorials from state banks were pro-Bank. Mrs. Wilburn stresses these as indicating widespread support for the Bank on the part of the state banks, particularly those in the South and West. However, while she frequently notes that Jacksonians exerted pressure to obtain anti-Bank testimony, she virtually ignores the fact that the Biddle group was also quite active in seeking memorials. The number of memorials written by the state banks at the request of officers of the Bank's branches is played down. While emphasizing the fear held of certain Albany banks by other banks in New York State in explaining the paucity of memorials from there, she overlooks the possibilities of similar motivation in the Southern and Western banks. Since the Bank was often a creditor of these state banks, with no set rules for collection, a state banker would have shown courage in refus-

ing a request to write a testimonial for the Bank. (Little mention is made of the Bank's operations in 1831 and early 1832. There was a large expansion of loans in the South and West, and for one of the few times before 1835 the Bank appeared as a net debtor to state banks. Other writers have discussed the Bank's leniency in collections on notes due in the Southern branches at this time. This could bear further study in evaluating the arguments of the memorials.) In several cases, to explain the absence of memorials, recourse is made to letters to and from Biddle. It is difficult to accept these as objective, particularly since several New York letters which are given heavy weight are apparently from someone wishing to see a branch in Albany in which he would have close connections. Indeed, given the massive publicity campaign and the more indirect measures of increased loans to Congressmen and payments to newspapers, Mrs. Wilburn's use of these memorials as expressions of popular will is hard to accept. Walter Buckingham Smith, in his basically pro-Bank *Economic Aspects of the Second Bank of the United States*, notes that "the hundreds of pages devoted to these [memorials] testify to the ability of the Bank's officers and friends to organize for the purpose of exerting pressure on Congress," and it seems difficult to base a convincing argument on memorials by 126 citizens and 70 banks. Nevertheless, this stress on the favorable opinions of the state banks does open up for further inquiry this subject, upon which opinion has heretofore been virtually unanimous.

In her discussion of the memorials, Mrs. Wilburn has emphasized several crucial questions concerning economic aspects of the Bank. Two of these are particularly interesting. The first is the role of the Bank in providing for capital inflows into the South and West from the East and abroad, as well as the smoothing of the process of interregional exchange. The second is the explanation of the regional differences in the development of banking structures. Mrs. Wilburn notes a correlation between pro-Bank sentiment and the extent to which states depended upon the Bank for currency. She uses this to explain New England's indifference to recharter. Neither issue, of course, is new, but this book serves to give them more central attention than is usually accorded, and attempts to connect them with voting patterns and public sentiment.

In summary, while there are many interesting questions discussed, it does not seem that the documentation supports the strength with which conclusions are drawn. At several points the discussion becomes incomplete. With Mrs. Wilburn's focus upon the question of public sentiment toward the Bank, this book will be of more interest to political historians than to economic historians. Because of its brevity, most readers trying to understand the Bank War will find it necessary to read this book in conjunction with more comprehensive studies.

STANLEY ENGERMAN

University of Rochester

Federal Tax Policy. By Joseph A. Pechman. Washington, D.C.: The Brookings Institution, 1966. Pp. xxi + 321. $2.45.

In the closely knit fraternity of public finance scholars, Joseph Pechman has been a leading figure for the past quarter-of-a-century. From a major preoccupation with income taxation, he has in this monograph turned his attention and considerable talents to the entire Federal revenue system and, as an extra dividend, set forth succinctly the main characteristics of the revenue systems of state and local governments. For a modest price, anyone who cares to become well-informed about American taxation can do so by a careful reading of this study. Even those who find economic jargon incomprehensible are not excluded; the style is nontechnical and readily intelligible.

The Pechman method brings to each topic examined the relevant quantitative information, analysis of the economic and, in many cases, the legal issues germane to the topic, and suggests conclusions. The amount of tabulated information presented in the text tables and appendix tables provides a statistical encyclopedia on Federal finances. Any writer of a textbook on pub-

lic finance will, if he is wise, have this work at his elbow.

Much of the analysis consists of clarification. Where aggregative theory is needed, the Keynesian framework is brought into play. Where price theory is indispensable, Pechman first looks for a consensus among contributors, and when no consensus can be found, which is often the case, usually sets forth various points of view.

In the chapter unhappily labeled *Consumption Taxes*—meaning not only a tax where the base is strictly consumption, illustrated by an expenditure tax, but also a variety of excise and sales taxes, where the commodities subject to tax are sometimes consumption items, illustrated by tobacco, and sometimes both consumption and instrumental items, illustrated by gasoline—the author adopts the customary comparative-elasticities approach. Despite the durability of this approach in the analysis of commodity taxes, the logic of its methodology gives results that fly in the face of common sense. Taking one taxed-commodity at a time, we learn that its price rises more or less and its output falls less or more. As more and more commodities are taxed, the method gives the results that prices generally are higher and outputs generally are lower. It is the latter result that is unbelievable: in some mysterious manner resources have been made to vanish from the economic scene. Using the same method of analysis, a general system of subsidizing commodities gives the delightful but nonsensical result that prices are generally reduced and output is generally increased, which implies a magical increase in resources. If the theory were correct, government should aggressively subsidize rather than tax commodities. In view of the well-established deficiencies of the approach, its continued use in tax analysis by Pechman and many others remains unexplained.

Pechman endorses the theory, highly unpopular among enthusiasts of Social Security, that the payroll tax levied upon employers is fully shifted to employees in the form of lower wage incomes. It is refreshing that this ancient piece of neo-classical economics should be getting, even belatedly, the support it deserves. With the tax on employees' wage income now in excess of 10 percent under the social security program alone, perhaps the Congress may have second thoughts about requiring young people of modest means to subsidize old people, including very wealthy old people.

On what may be called issues in tax design, the gospel according to Pechman calls for a much tighter definition of income for both the corporate and individual income taxes. The corporate income tax is to remain as a kind of second-best solution. The excises are to be made more selective. The social security taxes get a cool reception, as indeed they should. The estate-tax base is to be defined more tightly, and hopefully made to yield more than a revenue that now borders on the trivial. The existing tax structure is found, on the whole, to be reasonably satisfactory. One does not get the impression that Pechman would care to join in a crusade for drastic overhaul of the Federal tax system.

This monograph provides substantial fare for those seemingly few souls who are willing to think seriously about the Federal revenue system. Once again, The Brookings Institution has demonstrated that a congenial intellectual environment peopled by dedicated scholars has a substantial pay-off in terms of the public interest.

EARL R. ROLPH

University of California, Berkeley

The Term Structure of Interest Rates: Expectations and Behavior Patterns. By Burton Gordon Malkiel. Princeton, New Jersey: Princeton University Press, 1966. Pp. 271. $8.50.

During recent years, two antithetical positions have been taken in the literature concerning the term structure of interest rates. One group of economists maintains that expectations alone is the principal factor shaping the rate structure, while others contend that the supply of debt instruments, combined with the portfolio preferences of financial institutions, determine the structure of interest rates. Professor Malkiel's excellent study is an attempt to synthesize these two diverse positions.

Following a brief historical introduction to

yield relationships, there is a very useful critical survey of the principal hypotheses which have been advanced to explain the structure of interest rates. Besides the traditional expectations and institutional theories, the contributions of Hicks, Meiselman, and Kessel are reviewed.

In chapter 3, the author states that "the traditional expectations approach is, in principle, correct and of substantial importance in understanding the behavior of market interest rates of securities with different terms to maturity." He then argues persuasively that the expectations theory should be reformulated in terms of "explicit expected price changes rather than expected future short rates," and that a short planning-period should be substituted for the long-run horizon in the traditional approach. Three elements are set forth as the foundations for the reformulated expectations theory which "in various combinations restrict the possible shape of the yield curve."

An examination of the first element, the mathematics of bond-price movements, reveals that a given change in yields leads to roughly similar potential price fluctuations for long-term bonds. This fact helps to explain the yield curve's flatness over a wide range of maturities and "suggests that expectations of changes in the level of interest rates will influence the yield curve mainly in the early maturities."

The second basic factor, the expected normal range of interest rates, taken in conjunction with the first factor, "are sufficient by themselves to determine the signs of both the first and second derivative of the yield curve." Malkiel contends that when the level of interest rates is near the upper bound of the expected normal range and investors seek to equalize the mathematical expectation of gain over a short-horizon period, a descending yield curve will result because of the favorable possibilities for capital gains in long-term securities. Conversely, when the level of interest rates is near the lower bound of the expected normal range, an ascending curve will result, as investors have more to fear than hope in terms of the possibilities of capital gains and losses.

The third element introduces expectations proper to the model, and takes into account the fact that investors may attempt to forecast changes in the course of interest-rate movements. This factor will tend to "either accentuate or counteract somewhat the effects of the expectations of a normal range in determining the slope of the yield curve, but would not change the sign of the second derivative." In chapter 4, Malkiel tests the reformulated expectations hypothesis and discovers "strong empirical evidence" in support of it.

The remainder of the study is concerned with modifications to the formal model based on expectations. It is shown that the introduction of transactions costs imparts a positive bias to the slope of the yield curve. Next, as a result of his analysis of the behavior patterns of bond suppliers and investors, the author concludes that these market participants "are not indifferent among maturities offering the same expected holding period yield" and that "diverse expectations typically characterize the market." A partial-equilibrium model is then constructed to show the effects of diverse expectations and the observed flexibility of bond suppliers and investors upon the structure of rates. Malkiel demonstrates that "a non-expectations-induced change in the maturity composition of the supply of debt instruments can affect the rate structure." This finding may be used as justification for "operation twist."

In conclusion, Malkiel's synthesis of the expectations and institutional position represents perhaps the most realistic framework for understanding the forces shaping the yield curve that has appeared. This study should be of great interest to policymakers and investors, as well as to academic economists.

OLIVER G. WOOD, JR.

University of South Carolina

The Future of Small Banks. By Ernest Kohn. New York: New York State Banking Department, 1966. Pp. xiii + 184. $1.00.

This is the second in a series of studies on branch banking and mergers, undertaken by the New York State Banking Department. The first study, also Mr. Kohn's, sought to determine the effects on the public

interest of the branching and merging of New York commercial banks. This volume explores the capacity of small banks, both branch and unit, to compete successfully with large banks.

Mr. Kohn seeks to answer two principal questions: First, does the entry of a branch of a large bank into a community adversely affect the profitability and the deposit growth of the surviving small banks? (Home office protection is provided to smaller communities in New York State). Second, were the small banks that recenty merged operating at a competitive disadvantage prior to merger because of the presence of a large bank in the community?

Separate consideration was given to unit and branch banks. The results were then combined to draw conclusions about small banks in general.

The effects of entry on profitability were measured by net profits after taxes as a percentage of total assets, and net profits after taxes as a percentage of average total capital accounts. To determine the short-run effects of large-bank entry on existing banks, the profit ratios of the surviving small banks for the three years immediately after such entry were compared to the average for the three years before entry. The long-run effects were measured by averaging the existing-bank ratios for the three years 1961-1963 and expressing them as a percentage of the ratios for the average of the three years prior to entry.

Because these profit ratios reflect not only the possible effects of large-bank entry but also more general factors, they were compared with profit ratios for various benchmark groups—type-of-area (major city, suburban, rural, small urban), size, and all-commercial-banks.

The entry of a large bank appeared to have adverse short-run effects on the profitability of the surviving unit bank, but the unit bank was able to adjust over the long run. On the other hand, although small branch banks did not appear to be adversely affected in the short run, the evidence on the long-run effect was inconclusive (the two net profit ratios yielded opposite results).

The casual reader should be forewarned of Mr. Kohn's somewhat cavalier use of the terms "adverse" and "not adverse" in summarizing his results. The entry of large banks was considered to have had an "adverse" effect on the surviving small banks if more than half of them performed more poorly than the benchmark group. The effect was considered "not adverse" if half or more performed better than the benchmark. Why one-half was chosen as the line of demarcation is not explained. A broad middle range labeled "inconclusive" would seem justified. Indeed, an examination of the summary tables (Tables 44 to 49 and 99 to 104) leaves one with the feeling that "inconclusive" might be the more appropriate term to describe the general results.

His overall conclusion is that the evidence does not support the conventional belief that the profitability of most small banks is adversely affected by the competition of large banks. However, deposit growth rates did appear to suffer.

Similar procedures were used in examining the premerger-profitability and deposit-growth of small banks prior to their merger with large banks. Premerger-profitability of these banks was lower than that of banks that did not merge, but the data do not support the hypothesis that this was the result of competition from large banks. Once again, the growth rate of total deposits did seem to be adversely affected by competition from the large banks.

Although bank profitability must play some role in policy formulation, the basic focus for public policy must be the relative efficiency with which different banking systems, in both their size and structural dimensions, can provide banking services. The definition and measurement of social cost and social output remains the task at hand.

This observation should not obscure the fact that Mr. Kohn's study has added considerably to the body of current banking research on which, hopefully, future policy will be based.

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Gold and World Monetary Problems. National Industrial Conference Board Con-

vocation. New York: The Macmillan Company, 1966. Pp. 240. $5.95.

This book contains the edited proceedings of a conference of representatives of financial, governmental, and academic circles held October, 1965. Among the 39 participants were R. A. Young, P. Cortney, E. M. Bernstein, W. Busschau, R. Triffin, G. Haberler, W. Hoadley, J. Viner, O. Emminger, R. Harrod, D. Dillon, H. Wallich, M. Gilbert, J. Exter, E. Despres, R. Reierson, and A. Meltzer. Though sponsored by the NICB, the conference was financed by the Transvaal and Orange Free State Chamber of Mines. It does not appear that advocates of a gold-price increase converted anyone to their faith, or that there was a thinning in the ranks of the believers. Nonetheless, the debate was interesting.

In addition to a summary by J. B. Condliffe, there were seven formal sessions, each consisting of a position paper and comments by various discussants, some obviously prepared beforehand, others apparently unrehearsed.

Ralph Young set forth the official U.S. position with these four points: (1) The restoration of payments balance by the U.S. and the U.K. will mean inadequate growth in international reserves and growing worldwide deflationary pressure; (2) The world's needs for additional external liquidity is inversely related to the effectiveness of the adjustment process; (3) An increase in the dollar price of gold would be an inequitable, disturbing, and probably ineffective way to increase world reserves; (4) The best way to get a deliberate and systematic creation of reserves is through an evolution of the IMF and the retention of the dollar and sterling as reserve currencies.

This moderate position was essentially endorsed by E. M. Bernstein, author of a second paper, who explained his specific proposal for the creation of a new reserve asset, which he argued was superior on a number of grounds to alternative proposals by d'Estaing and Roosa.

A third "establishment position" was advanced by Otmar Emminger. Although he believes that countries should "have their domestic policies oriented more toward exterior factors than they do now," Emminger opposes any return to a strict gold standard which, he notes, probably never actually existed. He is also opposed to any increase in the dollar price of gold. An urgent and neglected matter, in his view, is the creation of international agreement on the *composition* of reserves. Believing that gold must constitute a smaller fraction of total reserves in the long run, Emminger notes that international liquidity has been depleted in recent years as countries have increased the gold content of their reserves.

Three of the remaining position papers advocated an immediate doubling (or more) of the price of gold. Philip Cortney argues that a failure to double the dollar price of gold will lead to another Great Depression which, in turn, will compel governments to make massive public expenditures financed by "paper money" and induce the triumph of socialist governments everywhere. William Busschau advocates increasing the price of gold (appropriately to $75 an ounce), because this is the only way to increase *net* world liquidity—a matter of some urgency in his eyes. He contends that dollars, sterling, and IMF drawing rights and the like do not provide genuine international liquidity, since reserves held in such forms are liabilities, direct or indirect, by residents of other countries. Wallich was an especially effective critic of this argument.

Harrod also wants the gold price doubled, for he believes that this is the most expeditious way to correct the dearth of global reserves that has existed now for a number of years. His interest centers, however, on the establishment of a system for the regular creation of fiat reserves in appropriate amounts. He advocates that "the new medium" be increased so as to maintain a constant proportion between *total* reserves and total "world trade," and suggests that increases in the new medium in any n-th year be such that

$$\frac{R_n - R_{n-1}}{R_{n-1}} = \left(\sum_{n-5}^{n-1} T_i - \sum_{n-6}^{n-2} T_i\right) \Big/ \sum_{n-6}^{n-2} T_i ,$$

where R_i = *total* reserves at the end of the i-th year and T_i = the value of world trade during the i-th year. Harrod is staunchly opposed to having payments imbalances corrected swiftly, except when they stem from "demand inflation"—a rarity (he argues) among the developed countries today. He

sees monetary and fiscal policies as inappropriate adjustment techniques and favors an incomes policy instead.

Haberler attacks Harrod's use of the ratio of world reserves to world trade in 1939 as a benchmark to assess the adequacy of world reserves today. He points out that this ratio was at a swollen level after the price declines, trade contraction, and devaluations, of the 1930's. He also attacks Harrod for assuming, naively, that the authorities will "do the right thing" if only they have sufficient time (liquidity) to enable them to take gradual measures to correct an external deficit.

In addition to serving as perhaps the most effective of the many critical discussants of the various papers and counter-statements presented by the other participants, Haberler (with able support by Meltzer) offered the central arguments in favor of fluctuating exchange rates:

> I think the adjustment mechanism is much more important than the liquidity problem. If the adjustment mechanism doesn't work, no amount of liquidity is enough. And on the other hand, if the adjustment mechanism works well, then you need have little liquidity. So we should try to speed up and make more efficient the adjustment mechanism.
> I assume that we want to avoid direct controls. If that is accepted and if you also wish to avoid inflation, then you have to introduce some flexibility in the exchange rates, because the adjustment mechanism nowadays operates only through controls or differential rates of inflation.

Interesting counter-arguments were advanced by Bernstein, Harrod, Gilbert, Emminger, and Despres, but I found none convincing.

All in all, this is an engrossing book, ranging as it does over the whole terrain of recent debate in international finance. Almost all views are ably presented; and almost all are vigorously criticized. Readers are bound to come away with a better grasp of current controversy in the field of international finance and with a more mature judgment of men and opinions in the field.

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